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THE COTTAGE GARDENER,

AND

COUNTRY GENTLEMAN'S COMPANION.

CONDUCTED BY GEORGE W. JOHNSON, ESQ.

EDITOR OF THE "GARDENER'S ALMANACK," ETC.

THE FRUIT AND FORCING-GARDEN, by Mr. R. Errington, Gardener to Sir P. Egerton, Bart., Oulton Park.

THE KITCHEN-GARDEN, by Mr. J. Robson, Gardener to the late Earl Cornwallis; and Mr. T. Weaver, Gardener to the Warden of Winchester College.

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WEEKLY CALENDAR.

M D	W D	APRIL 7—13, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
7	Th	Ferruginous Drab; oaks.	30.218 — 30.150	50—40	N.E.	—	24 a. 5	41 a. 6	5 37	29	2 9	97
8	F	Common Quaker; willows.	30.270 — 30.232	54—28	E.	—	22	42	sets.	1	1 52	98
9	S	Shoulder stripe; wood sides.	30.312 — 30.307	53—24	S.E.	—	19	44	7 a 48	1	1 35	99
10	SUN	2 SUNDAY AFTER EASTER.	30.292 — 30.189	60—26	E.	—	17	46	8 57	2	1 19	100
11	M	Early Tooth-striped; woods.	30.177 — 30.144	55—38	E.	—	15	47	10 5	3	1 2	101
12	Tu	Glanville Fritillary (larva).	30.278 — 30.236	57—27	E.	—	13	49	11 12	4	0 46	102
13	W	Greasy Fritillary (larva).	30.313 — 30.274	68—23	S.E.	—	10	51	morn.	5	0 31	103

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 55.5°, and 36° respectively. The greatest heat, 73°, occurred on the 9th in 1844; and the lowest cold, 20°, on the 16th in 1847. During the period 93 days were fine, and on 89 rain fell.

THE FOREST TREES OF BRITAIN.—No. 2.



THE WALLACE OAK.

THERE are four patriots—two of them of our own land—who we always associate together as “great, glorious, and free”—Alfred, Wallace, Tell, and Hofer. It is with the second only we have now to do; but how much they were all beloved—how certainly will their

memories be handed down to the end of time by their countrymen—is easily appreciated by the traveller who treads now upon the ground which they trod when they called upon their brethren “to do or die.” If he takes a pilgrimage to Wantage, he finds “Alfred’s Well;” if

he passes over sea to Switzerland and the Tyrol, he finds similarly associated the names of their great leaders in the struggle for freedom.

In Scotland, the tropic land of tradition and legend, "the peerless knight of Elderslee," stands pre-eminent in all such local memorials—"The mountain path which he may have tracked, the headlong torrent which he may have crossed, the rugged fastness in which he may have intrenched himself, still bear his name, and still invite the wanderer, and charm the imagination." The number of local objects associated with the name of Wallace are indeed marvellous, and fill a goodly number of pages, even in their slight enumeration given by Kerr, in his "History of Bruce."

"Among these memorials to the fame of Wallace which the gratitude of posterity has delighted to point out, the trees under which he is known to have reposed or encamped have been treated with a degree of attachment which, defeating its aim in its excess, has ultimately caused the destruction of the object it wished to commemorate. Hence the famous Oak in Torwood is no longer remaining. It stood in the middle of a swampy moss, having a causeway round it; but the last fragments of its ruins have been carried off by the pilgrims whom its fame attracted, and only the spot on which it stood now remains for them to pay their devotions to. Of Earnside Wood, where Wallace defeated the English, on the 12th June, 1298, and which formerly stretched four miles along the shores of the Frith, not a vestige is left; and in the same manner, many other individual trees and woodland tracts, once rendered interesting by being associated with the valiant darings and hair-breadth scapes of Wallace, have bowed before the warring elements, or the un pitying axe. One Oak which bears his name still, however, survives, and is perhaps more interesting than any of those we may otherwise lament, on account of its standing immediately at the place of his birth, which was Ellerslie, or Elderslee, three miles to the south-west of Paisley, in Renfrewshire. It is mentioned by Semple, in his 'Continuation of Crawford's History of Renfrewshire,' as 'the large Oak tree, which is still standing alone, in a little enclosure, a few yards south from the great road between Paisley and Kilbarehan; being on the east side of Elderslee rivulet, where there is a stone bridge with one arch, the manor of Elderslee being a few yards distant from the rivulet on the west side. They say that Sir William Wallace and three hundred of his men hid themselves upon that tree, among the branches (the tree being then in full blossom), from the English. The tree is indeed very large, and well spread in the branches, being about twelve feet in circumference.' p. 260. 4to. 1782. The present dimensions of the Wallace Oak, as communicated by Mr. Macquisten, an accurate land-surveyor, are twenty-one feet in circumference at the ground; and at five from it, thirteen feet two inches. It is sixty-seven feet in height, and its branches extend on the east side to forty-five feet, on

the west side to thirty-six, on the south to thirty, and on the north to twenty-five, covering altogether an extent of nineteen English, or fifteen Scotch poles, land-measure. According to the testimony of aged residents in the neighbourhood, the branches of this tree, about thirty years ago, covered above a Scotch acre of ground; and one old person pointed out a spot on the ancient turnpike-road, forty yards north from the trunk of the tree, where he said that, when young, he used to strike the branches with his stilt."

Thus wrote Strutt some twenty years now passed, but "The Wallace Oak" still remains, though somewhat shorn of its former proportions. In a recently-published "Statistical Account of the Parish of Paisley, Renfrewshire," it is thus noticed:—

"Near the west end of the village of Elderslie, and on the south side of the turnpike-road passing through it, a tenement of rather ancient appearance is pointed out as the house in which Sir W. Wallace was born. But if this brave defender of his country was born, as is generally allowed, on the spot, it must have been in a habitation of older date. Adjoining this house is an old garden, from the foundation of which, about thirty years ago, a stone was dug, bearing the following inscription—'W. W. W. Christ only is my Redeemer.' The stone was taken to Elderslie house, where it still remains.

"Near 'Wallace's house,' the name by which the above-mentioned mansion is known, but on the north side of the turnpike-road, stands the very celebrated tree called 'Wallace's Oak.' Many are the years that must have rolled away since this tree sprang from the acorn. About eight or ten years ago, its trunk measured twenty feet in circumference, now it only measures fourteen feet two inches. It was sixty feet in height, and its branches extended to the east forty-five feet, to the west thirty six feet, and to the north twenty-five feet, covering altogether a space of nineteen English poles. It deserves its name from having, as tradition affirms, afforded shelter to Wallace, and a party of his followers, when pursued by their enemies, in the same way as the Boscobel Oak afterwards did to Charles II.

"It is also worthy of notice, that in the garden of Wallace's house there is to be seen a fine specimen of our Scottish Yew, said to be coeval with, some say older than, the celebrated Oak. But be this as it may, it is certainly of ancient date, and tradition has assigned to it the name of Wallace's Yew."

Let us not also neglect to record, that at Robroyston; in the parish of Calder, and shire of Lanark, Wallace is said to have been betrayed and apprehended by Sir John Menteith, on the 11th of September, 1305. After he was overpowered, but before his hands were bound, he is said to have thrown his sword into Robroyston Loch or Lake, and an Oak couple or joist, belonging to the barn in which he was taken, was shown within these few years in the neighbourhood, as a memorial of the great Wallace.

COVENT GARDEN.¹

WE cannot expect to have any alteration in the state of the markets for some time to come. Everything remains in the same state as when we last reported. There has been a few *Early Peas* from Portugal during the week, which realized 30s. per peck. *Forced Strawberries* may be had at 3s. an ounce, but all other fruit is scarce, and realizes high prizes. *Forced Grapes* make from 20s. to 25s. per pound. *Dessert Apples* 10s. to 15s. per bushel; and culinary sorts from 7s. 6d. to 12s. Good *Potatoes* are scarce, the best fetching £8 per ton.

Plants are short on account of the frost, but *cut flowers* are rather plentiful; they are chiefly *Camellias*, *Roses*, *Geraniums*, *Heaths*, *Tulips*, *Crocus*, *Epacris*, *Cinerarias*, *Violets*, and *Hyacinths*. H.

GOSSIP AND GLEANINGS.

IN a former volume we gathered together such fragments of the biography of the *Tradescants* as time had spared, and industry had discovered. Among these fragments was this one from the churchwarden's accounts of St. Mary's, Lambeth.

"1637-8. Item. John Tradescant: ye gret bell and black cloth. 5s. 4d."

This was believed to relate to the burial of Tradescant, the elder, and the belief is sustained by the subsequent discovery of his will. In this document, according to a writer in "Notes and Queries," he is described as "John Tradescant, of South Lambeth, co. Surrey, gardener." The will is dated January 8, 1637, and proved May 2, 1638. It sets forth that the younger Tradescant was his only child, and that the latter, at the date of the will, had two children, John and Frances Tradescant. His son was the residuary legatee, with a proviso, that if he should desire to part with, or sell his cabinet, the celebrated "Tradescant's Ark of Curiosities," he should first offer the same to the Prince. His brother-in-law, Alexander Norman, and Mr. William Ward, were the executors, and proved the will. The testator held the lease of some property at Woodham Water, in Essex, and two houses in Long Acre, and Covent Garden. (*Notes and Queries*, vii. 295.)

We are glad to learn that a *Poultry Show* on a more extended scale than that of last year is to be held this winter at Taunton, and a preliminary meeting for establishing one at Yeovil has been held.

Not only has the temperature of the air, but the temperature of the earth, during the last two months, tended to keep vegetation backward. In February, at one foot below the surface, at Chiswick, the earth was $3\frac{1}{4}$ degrees colder than the average of the preceding eleven years, and at two feet, nearly two degrees colder. In March, at the same depths, the earth was about $2\frac{1}{4}$, and $3\frac{4}{10}$ degrees colder than that average.

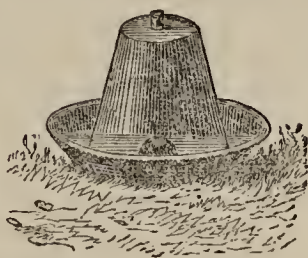
A correspondent and first-rate gardener, who must be known to our readers, however, only as AMELLUS, has favoured us with the following "drops and snatches of good things"—

"What a glorious plant the hardy *Dracæna* at Chiswick is! It is a fit companion for the Titanic Pampas Grass. *Colocasia edulis* flourished with me in my out-door hotbed, and is probably not too tender to be very ornamental in summer, with the treatment of a Vegetable Marrow, or ridged Cucumber. Indeed, I could ensure it. I saw your hybrid Amaryllids, *Josephine* and *Vallota*, and have no doubt of the cross, but I thought the other parent had been *Cyrtanthus*.* The *Vallota* blood was evident to me.

"Henderson has *Monsonia speciosa*, in his catalogue at any rate, and I have ordered a plant. Also *Pelargonium erectum*, the best, I believe, of the *Echinatum* hybrids. *Pelargonium echinatum*, when taken into the temperate stove in late autumn, will flower nicely for a week or two. It will then grow on steadily and quietly through the winter, being kept as light and airy as is possible in such a house, but the most singular part of its habit is to come. About this time in the spring it will begin to grow rapidly, and flower beautifully, producing seed too. In this growing state it will take strong shifts and rich soil. Moreover, every good shoot that you strike will go on as if on the parent plant, and flower in small pots. It is absolutely necessary, however, to strike them under a tight-fitting bell-glass, or Wardian case, and each in its own little pot. Unprotected they would lose the foliage, and take a long while to root. After flowering, the plant should be turned out like other plants, putting it in a double pot, i.e., one within another. They should be put at first in a close cold-frame to prevent the leaves falling, for I do not think a dry leafless rest is necessary.† Many plants will take their nap, and a healthy one, too, if in the open sun, wind, and rain, and will wake again sooner, and better than if kept "perfectly dry," as the books call it; certainly better than in the "dry state" of the poor amateur, to wit, in an undrained pot of sour, clotted soil, in an apparently dry place in his greenhouse, under that wretched vine idol to which he annually sacrifices the pretty children of Flora that would otherwise adorn his house."

Another correspondent (*Highgateensis*) says:—

"I have sent you a sketch of an economical poultry fountain, for your cottage friends. I find it answer the purpose quite as well as the most expensive ones. The articles



required are simply a flower pot and saucer. Detach a piece from the rim of a flower-pot, about three-quarters-of-an-inch deep, and one inch wide, plug the hole in the bottom of the pot with a piece of cork, fill the pot with water, placing the saucer on the top, then quickly turn the whole upside down, when the water will fill the space in the saucer around the pot. The hole in the rim of the pot must not be quite so deep as the height of the side of the saucer, and the plug must be air tight—that is the secret of success. It is easily cleaned, simple, and cheap, and no fear of the chickens dabbling in it."

PLANTING AN ORCHARD OR FRUIT GARDEN.

(Continued from page 498.)

It will be remembered by the reader, that in the last paper the case of a Fruit Garden, within walls, was considered; the object being to grow the greatest amount of good fruits and good vegetables in a given space; and such will, doubtless, suit a majority of our readers. As, however, a variety of other cases will occur, it will be well to view the question in our outset in as many phases as possible, in order that almost every variety of soil and contingency of circumstances may be met; and that this series of papers may form a tolerably comprehensive guide. Not every one can lay hold of a plot for

* There are crosses from *Josephine* and *Cyrtanthus*, by the pollen of *Vallota*.

† It is through over-drying that so many fail to bloom and seed it.—B.

a fruit or kitchen garden so well adapted for the purpose as to require no more at the outset than that suggested in the last paper, which simply supposed a ease of ordinary land which had been under the plough or spade. Sometimes, and more fortunately still, the orchardist may take to a plot of old grass land, and this, indeed, above all others, is a piece of luck much to be desired, provided the operator knows what to do with it. I will, therefore, offer a little advice on this head, irrespective of the texture of the soil and subsoil, for these will form a subsequent consideration.

Whether the plot be enclosed, or an ordinary orchard, the turf is of the utmost value for the fruit trees; not merely for fancy or tender kinds, but for ordinary sorts. It will retain its organic matter, or fibre, so long as to preclude the necessity of any serious amount of root-culture for many years. It will enable the trees to endure extremes of weather; and it may be added, that trees in turfy composts will not prove so liable to blights as in ordinary soils. Under such circumstances, then, the first business is to pare off the turfy material, and to stack or ridge it in convenient situations, remembering that a portion of it will be required to form the stations for fruit trees, of which more in the proper place. In some cases, it may prove convenient to pile a quantity in the centre of the garden or orchard, or close to two of its opposite sides, so that when required it may be near at hand. This turfy material must be piled in a sharp ridge to exclude the rains, and should, if possible, be removed in a medium state as to moisture. September is a very eligible month for this process; and the thickness to which it may be pared must depend on the depth of the good soil: if the latter is not half-a-yard, a very light hand must be exercised; if more than two feet, the turf may be pared above two inches in thickness. A valuable mass of compost will thus be obtained, and the proprietor may count on a surplus for other purposes after planting his fruit trees.

In thus supposing the ease of a field about to be made into a garden or orchard, we may also imagine that the surface soil is not so equal in character as ordinary ground which has been under the spade repeatedly; and which the last paper more especially referred to. In many cases the surface soil may prove *unequal*, both in depth and character, as to texture. Subsoils, too, vary much; and although means will be suggested to prevent the roots entering ungenial substances, yet a due attention must be given to its character in the outset. Sometimes the surface of the subsoil will rise to an inconvenient proximity to the surface; or, in other words, will be irregular; besides this, what are termed "pots" may occur; that is to say, hollows in the surface of the subsoil, wherein decayed vegetable or other matter may have accumulated, like sediment in the bottom of a vessel. This generally occurs over a clayey or marly subsoil, in the vicinity of peaty or boggy grounds; but occur where it may, a jealous eye must be kept on such conditions.

Now, it has been a very common practice to trench very deep, and to remove every obstacle, cost what it might. People who do this must surely have more money than discretion. I have heard of gardens, where the whole body of soil of an infertile character (or supposed to be so) was trenched over four or five feet in depth (although the natural soil was by no means a yard), the bad subsoil removed, and its place supplied by expensive composts, the plunder of valuable pastures, combined with the equally valuable material of the farm-yard; and all this to produce sundry huge cauliflowers too big for the cook's saucepan, and eelery too gigantic and coarse to be long preferred, unless for exhibition purposes. This is all very well to astonish folks with, but as a profitable investment it will not bear consideration. To use cauliflowers which cost a

crown a head in their production will not suit one taste in a hundred.

The question before us, then, is, how to manage a plot of uneven ground of a rather infertile character in the most economical way; a due regard being had to future success? Here the question assumes two shapes: the one, the orchard alone; and the second, the fruit and vegetable garden. In either case there can be no objection to trenching the whole over after draining, especially if vegetable culture is to be carried out; but the depth to which to trench is an affair that requires a moment's consideration. It may be supposed, very fairly, that no person would select a plot of ground for this double purpose, unless an average of nearly half-a-yard of soil can be relied on; but if from twenty to thirty inches so much the better. When such is the case, and the soil and subsoil are uniform as to character and level, the ease is one of extreme simplicity, and involves little expense; but when the surface-soil is uneven in point of depth, so that the subsoil, in places, does almost "crop-out," the depth of trenching must be regulated accordingly. In some cases it may be well to open a trench nearly three feet in depth, if the soil be good to that extent; and if after proceeding awhile it is found shallower, the operator will, perhaps, find it necessary to fill part of his trench in: this, however, is putting an extreme case. If the surface of the ground is uneven, and the proprietor *will have* it levelled, the operator had better keep a side-line, or gauge, by him through the process; or he may form stations, to indicate the level by means of sight sticks. He will thus be led to make frequent exchanges as he proceeds; sometimes borrowing, sometimes paying, and the wheelbarrow will be in frequent use. It will be found, too, occasionally, that in lowering knolls or high portions, that the subsoils will be brought nearer than at other portions; but having assumed a maximum and minimum depth to begin with, it must be sustained by removing as much of the subsoil as will provide that depth; and, possibly, this subsoil may be got rid of in other portions.

Now, supposing the garden a square, or nearly so; and that it is required to be levelled; the operator should examine well the exterior lines, or sides, before he commences, and see which side, or sides, *must and ought* to rule the rest in regard of the levels; for it will generally be found, that walks, or objects either already formed, or to be done, have a right to influence such levels. Such a line, or lines, then, should have the necessary stations set up from whence the cross lines will proceed. In trenching, the ground may be "chopped out" by line into parallel strips; their width ruled by the number of men to be employed in the operation; each man should be allowed about three yards.

Another consideration remains; Is any manure required to be introduced? Where this is the case, the process becomes more complex and requires a little sound workmanship. In the case of a new garden for vegetables and fruits, and where it is desirable to trench for the sake of levelling and equalising, it will generally be found a better plan to introduce manures subsequently. In the first place, there will be no occasion to introduce manure where the trees are to be planted; and next, new soils, in which the surface or best soil is trenched down, do not, in general, require manurial matters at a low level. Besides, it is great odds but the soil will prove somewhat stubborn, and will need twice working; requiring to lay awhile in order to acquire a mellow or crumbling condition. In such cases, it will be well to add manure for vegetables just before cropping; when it may be deeply dug in. It must be borne in mind, that trenching some eighteen inches or more in depth has a tendency to bring up soil, which, although fresher in character than the sur-

face soil, is poorer, or deficient in organic matter. This, of course, has to be supplied by manures in the upper stratum; and when that is done in a proper way, the plot may be said to be highly improved, drainage being carried out previously where needed—for provision is made for the crops enduring the droughts of summer by deep roots, as well as for a proper establishment of the young plant by a generous surface soil.

If, however, it is deemed expedient to introduce manure in the original trenching, care must be taken to blend them well with the soil at a somewhat low level; bearing in mind that the surface soil can be improved at any time. In such a case, if the ground is to be levelled, and is of unequal depth, the operator will do well to wheel his manure as wanted; for if the ground be covered previously, there will be much loss of labour in shifting the manure.

Before proceeding to dismiss that portion of the subject which relates to fruit trees, I must beg to offer a few remarks on the textures of soils—for it is not simply a question of manures. Those who are establishing new gardens, or orchards, will do well to take this into consideration at first; seeing that the plot will never after be so accessible to improvements of this kind. Whether for fruit trees or vegetables, or the two combined, which is the ordinary case, it will be found of immense advantage to do what can and ought to be done at the outset. Improvements of this kind, judiciously effected, will be found true economy in the end, besides being a source of constant satisfaction retrospectively.

Soils differ much; and localities differ as much in the means at hand for improving the staple of soils. In some we find marl abundantly, or clay; in other districts, sand, or sandy loams prevail, and about commons, wastes, &c., we have bog and heath, or moor soil, &c. Then, as to the refuse of our trades, such articles as lime, ashes, old brick rubbish, saw-dust, tan, &c., these are seldom all to be met with in one locality.

In the next paper, the improvement of the staple will be taken into consideration. R. ERRINGTON.

BULBS.

HÆMANTHUS.

(Continued from page 480.)

This is an extensive group of African bulbs, representing as many outward variations of form in the growth, bulb, and leaf as *Amaryllis* itself; yet so uniform in the general aspect of the flower, that it is only necessary to learn two distinct forms of them to enable one to recognise, at first sight, any species of the genus *Hæmanthus*. There is one part of the accompaniment to the flower of bulbs in general, and a very essential part for those who treat of them botanically, but which I left altogether unnoticed until I could bring it in, popularly, as a gay appendage to a flower, and it is in *Hæmanthus* that it has first occurred in that way. The name of this part is called in books, *spathe*, or envelope, and now is the right time of the year to learn what is really a *spathe*, or the envelope in which *Flora* sends her notes (flowers) into the country every spring, in every year, since the beginning of flowers. The *Daffodil* flowers are now in their envelopes (*spathes*), all over the country. One flower in some kinds, and more flowers than one in most kinds of the *Daffodil* or *Narcissus* family, are enclosed in a light brown membrane, we cannot call it a leaf, or anything like it; it is a wrapper or over-all, or envelope, in fact, a *spathe*; and it encloses the flower-buds till they are ripe enough to open, when they split the envelope into parts, and each part is called a valve. Then it often happens that one

kind of bulb can only be known from the next nearest kind by the number of the valves of the envelope. In some bulbs the whole envelope falls off as soon as the flowers open; in others it only rolls back; in a third it takes different turns and directions, but—and it is the most singular of all—in this *Hæmanthus* the flowers are of little moment, and the envelopes or *spathes* are gay and varied instead. What would the flowers of *Poinsettia pulcherrima* be without the large scarlet bracts which accompany them? and still less conspicuous is the flower of a Coxeomb without the addition of the “Comb.” The flowers of most of the *Hæmanthus* are much better looking without their envelopes than these examples; still, as bulb-flowers, most of them would cut a sorry figure without their painted envelopes.

The number of valves, or guard-leaves, as we might call them, in the *spathes* of this genus, vary from three to six in the different kinds—and they stand upright, like guard petals, all round the flowers, which are individually very small indeed; but there are a great number of them standing close together on the top of the scape, then the stamens are longer than the flower, and the styles longer than all, so that if the guard petals were taken off, the bunch of flowers would look like a painter's brush on the end of a stick. The leaves of some of the kinds come in two's, and four's, or more—growing quite flat on the ground. In some the leaves are smooth and shining; in others the edges are fringed all round with stiff short hairs—while a third division of them are hairy all over the leaf and flower scape, and grey, after the manner of a badger. And there is a part of the family with long necks to the bulb, or rather to the bottom of the leaves, which grow upwards, and join together in a long neck at bottom. Some in this section look very much like *Eucomis* before the flowers come.

As people are making a move for growing bulbs in classes, in pits, or borders, or in pots, I would recommend all the kinds here described, for the pit section, as they are as easy to manage that way as common Cactuses, and they are certainly very interesting as part of a varied selection; but for pot culture, I dare hardly recommend a single bulb in the genus, except to the curious. There is one stove bulb among them, *multiflorus*, from Sierra Leone, with crimson flowers, which spread out wide, and it has no envelope or guard petal (*spathe*), or rather, it is deciduous, and this is rather a handsome kind; but then it is a most delicate sort, and the least mishap kills it. All the rest, with recumbent leaves, delight in yellow loam, with a large portion of sand in it; while the columnar, or those with long necks, will grow freely in the richest soil in the garden.

HÆMANTHUS CARNEUS—This is my own favourite of the whole genus, and it is easily known from the moment the leaves appear, as they are hairy all over, and very flat, broad, and *recumbent*. The flowers are larger than in any of the rest; there is no guard petal or upright *spathe*, and the stamens and pistils are within the flower.

HÆMANTHUS COCCINEUS.—This is the best known of the family to gardeners. It was in every stove in the country when I was a boy, and it is the first pot bulb I ever knew. It shows how far some bulbs may be ill-treated with impunity. This bulb is all but hardy, and will establish itself in a few years, if planted out in a cold pit; so much, that it will throw up a flower scape, a foot to fifteen inches high, with a large mass of flowers on the top, guarded with a fiery scarlet *spathe*, such as never was seen in a stove or greenhouse.

HÆMANTHUS GRANDIVALVIS.—There is no difference between this and the last, except in the much greater size of the *spathe*, and in their not being so bright a scarlet. There is a good figure of it in the *Botanical Magazine*, 1075.

HÆMANTHUS COARCTATUS.—This also belongs to the *coccineus* section. It has the spathe or envelope valves very upright, and close to the flowers. The colour of them is a duller red than the last, and the edges of the leaves, when they first issue from the bulb, are scarlet, but they soon turn green when they advance and get more in the sun and air.

HÆMANTHUS INCARNATUS, *zebrinus*, *concolor*, *crassipes*, and *tigrinus*, are the next best, and their bulbs and growth are not so large as in the others, yet with quite as large flower-heads; but a description of them would only be a repetition in a popular way. Masson, Burchell, and Jacquin, are the best authorities for them. In this country, where they were at first so much misunderstood, very few know anything about them, and their flowers have not been figured with us, so as to give any one an idea of what they are like. But they will certainly become popular, as well as other tribes of bulbs, when it is discovered how cheaply they can be grown, and in what small space. All this, however, is in reserve for amateurs; for as gardeners are now situated, there is not one of them out of a thousand who can devote the necessary time and attention to the cultivation of any bulbs but the very commonest.

HAYLOCKIA.

HAYLOCKIA PUSILLA.—A very small black bulb, with very narrow leaves, and flowering from among them, exactly like a *Crocus*; the flowers white, and tending to straw colour. Anderson sent home this little curiosity from Buenos Ayres. Another traveller says, it is very common at Maldonado, and there is a variety of it with red flowers. It grows all the winter, goes to rest before Midsummer, and flowers in the autumn, after resting about four months. Any light soil will do for it, and cold frame culture along with *Ixia* and such-like bulbs. It is related to *Sternbergia*, and was once called *Sternbergia Americana*.

HERBERTIA.

These are small Cypella-like bulbs, which flower in summer; *pulchella* is the best of them, with blueish-purple flowers; and *cærulea* is only a variety of it, with the flowers most decidedly blue. Like the last genus, they do better in pots, in light sandy loam, and cold-pit treatment.

HESPERANTHA.

These are very delicate little plants from the Cape; they are more tuberous than bulbous; flower always in the evening, and through the night, and close up in bright sunshine. *Radiata* is the best of them; the flowers are large, numerous, and of a beautiful light violet colour. *Angusta*, or *angustifolia*, seems only a variety of *radiata*. *Falcata* is very sweet in the evening; the flowers grayish-white, brown in the buds, and edged with yellow. *Cinnamomea* is so called from the outside being of a brown cinnamon colour; the flower is pure white when it opens, and is a pretty star-like flower. All of them are much more impatient of wet than *Ixias*, with which they ought to be grown in peat, under a cold frame culture.

HESPEROSCORDERUM.

Hardy, or all but hardy, gawky-looking things, of no great account. They put you in mind of the confused mass of mongrels called *Alliums*, and are only fit for botanic collections.

HIPPEASTRUM.

Among the large collection of bulbs by the "Winchester," referred to in my last, were four bulbs marked "from my own garden." The moment I saw them, I protested against their being natives of any part of the Cape colony, and as soon as they came into leaf, I was

sure they were not from any part of the African continent; but, before they flowered, the gentleman who sent them came home, and when he was pushed hard into a corner as to where he found those four bulbs, he owned he had them from Baron Ludwick's garden in Cape Town. They were natives of South America, and two of them were Hippeasters. *H. equestre*, the very one on which the genus was founded, by Dr. Herbert, "following up the idea of Linnæus, when he named one of the original species *equestre*."

There are about fifteen very distinct species of this genus described from bulbs that have flowered in this country; and nearly twenty varieties, some of which were first described as true species; but, when they all became better known, and received the same kind of treatment for many years, and by different individuals at the same time, it was easy enough to classify them into what were real species or types, and only well-marked varieties. At the present day there is not another group of bulbs, of equal extent, better defined than Hippeasters; but they are very much reduced now, and two-thirds, at least, of the original kinds are out of cultivation.

Every one of the species and varieties cross with each other without a single exception; and, in following out these crosses, gardeners lost sight of some of the original kinds altogether, so that the whole race is now confined to three types only, as far as my knowledge of our collections extend. The most numerous of these is that of *Reticulatum*, which includes all our best reds and scarlets, with very dark or bright green bottoms called the eye. The *Vittatum* section is the next, and in this, all our striped flowers, or clear white stripes on a light red ground, are classed. This is the oldest of all the hybrid kinds, beginning with *Johnsonii*, in 1810, which is a seedling from *Reginum* or *Regium*, by the pollen of *Vittatum*. The third section is the breed or *Solundriflorum*. The flowers in this section are quite different from all the rest, both in shape and colours; they have tubes, or a narrow bottom, three or four times longer than is usual, and the colours are as varied as the colours in the speckled breed of cattle. As Hippeasters are known to first-rate gardeners much better than Tulips, and as all the first-rate gardeners in the three kingdoms, and in the colonies thereto belonging, read THE COTTAGE GARDENER, "I expect," as they say in Suffolk, to get my whiskers pulled for this classification of "*our Amaryllises*." But now that Sweet and Herbert are not amongst us, I am quite sure that there is not another man living who has raised more hybrids in this genus than your old Scotch gardener from Inverness; and if I am wrong in my classification it is an error of judgment, and any one who can put me on a better plan will oblige me, even if he calls me anything but a gardener.

One of the best stimulants that I can offer for the more extended cultivation of these beautiful flowers among amateurs is this, that every one of them, without a single exception, can be grown to the utmost perfection in one kind of soil, and that must be the best yellow loam that can be had. About London, this kind of loam can be got at Norbiton, near the new Crystal Palace, or at Wanstead Common. If the drainage is very complete, I never could make out that a turfy or lumpy soil had any advantage over that which is fine enough to sow small seeds in; if the loam is very strong and inclined to bind hard after watering, it should be reduced with clean sand to the proper texture—leaf mould, rotten dung, or peat, I believe to be more injurious than not to any bulb that is to remain from year to year in the same pot, as is now the custom with almost all bulbs that retain their roots for an indefinite period. Pure loam, without any vegetable or animal manure, will keep sound and fresh for ten or twelve years in the same pot; and any additional richness

would be safer if added to water given to the bulbs. In my younger days, however, it was quite safe to make half of the compost for *Amaryllises* of rich stimulating manures, as, at that time, it was shaken from the roots every autumn, and the bulbs were dried as we do Hyacinths and Tulips, and I am certain they all flowered then as well as any we see now. At that time there were ten bulbs in flower at Christmas for every one that is now seen in bloom in March. Every little urchin then in one of the crack "places," could talk about "*our Amaryllis vittata and vittata major*," being so much better "this year" than usual, or more so than they ever were at Castle Aulicum, or Flora House. But now you may fall in with ten first-rate gardeners at an exhibition, not one of whom had ever seen a *vittatum* at all, much less know that there ever was a *major* variety of it, or that the race had ever been discovered to belong to a very different section of the order before the said gardeners were out of their smocks and pinafores.

Mr. Sweet was once the best authority and guide for them, indeed the father of many hundreds of Hippeasters. He was also the cause, in a great measure, of their downfall and the loss of some of the best species, as in his catalogue he jumbled them together like lottery tickets shook in a hat, without "heads or tails," and there they remain to this day a complete mass of confusion—species and varieties, natural and unnatural, hybrids, mules, and all the rest of them, put on the same level, in one common style of arrangement and nomenclature.

The following remarks on potting, and the kind of soil for Hippeasters, I have just received from one of my bulb correspondents who keeps a large garden establishment, and is one of the most successful growers of them and other bulbs known to me. D. BEATON.

"OBSERVATIONS TENDING TO THE FORMING OF GENERAL RULES.—All *Amaryllids* should be rather under-potted: *certainly for the first year*.

"After a year or two's growth *Hippeastrum Aulicum* will often make a cluster of offsets all round the bulbs. I take off all but three when sufficiently grown to be removed without injuring the old bulb. When small, they as it were form part of the bulb, and would make bad wounds.

"When two fragments of such soil as I use for the strong-rooting *Amaryllids* are pressed together, they will apparently adhere, but may be pulled asunder again, a stratum of air having, in fact, remained between the two surfaces. Now let the pot for your *Hippeastrum Aulicum*, or *Brunsvignia Josephine*, be filled with such fragments, the largest being placed at the bottom, allowing them to decrease in size as you reach the top. Each handful or layer should be pressed hard and firmly. Supposing the soil not to have received the compression recommended, a sugar basin, with its contents, would give an idea of what I mean.

"When afterwards the pot is soaked with water, the lumps will swell and form the most perfectly drained medium conceivable. Water poured in at the top will go right through and out at the bottom, and the soil will keep itself thus even for years. I use a small pot for a *crook*, no other drainage being necessary. I used charcoal at one time, but they do just as well without it. The leathery, snake-like roots insinuate, twist, and twine, with their irresistible life-force, around, over, and between the erevies of your loam lumps, where they find not only earth nourishment, but air to breathe.

"When a growing bulb is to be shifted, or when you have to pot one which has a number of tender roots too valuable to be injured by being thumped in with lumps of loam, another plan may be adopted; let your strong soil get dry, so that a few strokes of the flat of the spade will break it up into small lumps of many gradations in

size really resembling the sugar I spoke of just now. This must be used dry, and settled down by the ordinary method of rapping the pot smartly on the bench.

"AMELLUS."

BOTTOM-HEAT.

A correspondent asks "Which is the cheapest and best for bottom-heat—pipes or tanks?" The question has lately been alluded to, but it is of such general importance that it will bear adverting to again. Where expense is no object, and a dry or moist heat is desirable at pleasure, then a combination of both would be best, as by having pipes through the tank you could have openings for letting out moist heat at pleasure, and by letting out the water you could have dry heat at will, at the risk, however, of injuring the tank. If utility and economy are to be combined, then, when the separate modes are brought into direct comparison, I unhesitatingly say that pipes are *cheapest* and *best* for general purposes. There are relative, local, and personal circumstances, such as when the materials are on the spot, and one man is owner, architect, and workman, in which the tank would be the cheapest; but even then, I question whether by using the hot bricks and cement, or slate, &c., the expense would not be more than from 1s. 8d. to 2s. per lineal foot, which a flow and return pipe would cost per lineal foot of length of pit or house. It might be more now from the rise in the price of iron and the fixing. I have, in these volumes, referred to the length of time a wood tank of good deal and covered with slate lasted; but then its sides were open all round to the air of the house, and were, besides, *unpainted*, a matter of no little moment when durability in such circumstances was concerned. I should not expect wood, when covered all over with earth, to last a long time. Some people talk of the genial, moist heat from a tank, but if a close one, I never could perceive how the heat could be more moist than from an iron pipe; while I know that if I put moisture in the vicinity of that pipe when hot, the moisture must rise with the heat. I then came to the conclusion, that for bottom-heating, pipes are *best*; because in addition, if properly placed together, they would be little liable to the cracks and fissures to which most tanks, as generally constructed, are subject. If it should be found, however, that in certain circumstances tanks would be preferred, their cheapness may be promoted by having them shallow. All above from four to six inches in depth, is labour and money thrown away.

These considerations led me, when tanks were building all round me, and iron just then was very reasonable, to satisfy myself with two three-inch pipes for bottom-heat, and two of a similar size for top-heat, in two ranges of pits, which were to be applied to numberless purposes. The bottom and top pipes may act together at the same time, or independently of each other, as occasion may require; the flow pipe of each being furnished with a valve. I have got each range into separate divisions, but without stop-cocks to heat them separately, as I can easily regulate the temperature by the amount of air and moisture.

I will mention how I arranged the bottom, so as to furnish hints either for imitation or improvement. The bottom of the pit was first beat as firm as possible below the pipes, and scooped a little from the middle to the sides, and then covered with a couple of inches of grouting formed of gravel, sand, and lime, which set as firm as flint. The hollow was left for retaining moisture, when desirable, near the pipes. Over the bottom of the bed were arranged furnace clinkers, brickbats, &c., placed as hollow as could be done, to secure firmness; the hollowness being not only to allow the heat to permeate freely, but to save the material, as a considerable quantity is wanted to secure a thickness of from

eight to eighteen inches. Over this I placed a thin layer of clean rough gravel, about the size of walnuts, and before placing in the growing or plunging material, a layer of turf in thin strips, or two or three inches of half-rotten leaves are laid over the bottom to keep the soil, &c., from falling among the stones, brickbats, &c. Care is also taken to fix a drain-tile, or tube of wood, tin, or anything easiest obtainable, in every other light, with one end amongst the rough material beneath, and the other above the earth, &c., in which the plants grow, and by pouring water down these tubes I can have a moist bottom-heat at will. This is of importance in many cases, such, for instance, as a thin-skinned melon, that requires a high temperature, and a dryish atmosphere to mature it in perfection. If you water on the surface, your melon rots and cracks, and if allow the soil to get dry to a good depth, your leaves fade, and give you a melon without flavour. Pour water thus beneath, and the roots will feed on the vapour, while the surface will be dry.

Simple as the whole arrangement appears, there is a liability to contingencies. A hot day unexpectedly comes, and you order the top-heat to be turned off, and the wrong valve is shut. Or if the heat is turned off right enough, the fire may be too strong, and make the bottom pipes too hot, and this requires more trouble to detect.

In all cases where a mild continuous bottom-heat, and a rather high atmospheric temperature is required as continuously, I should be inclined to adopt the mode, not more simple than effectual, practised by Mr. Fleming, in the Pinery at Trentham. His flow-pipes are taken back and front round the house, and then return beneath the bed. When he finds the top temperature right, no mismanagement can make the bottom temperature too hot. One objection presented itself to my mind, namely, a season of fine weather, when artificial top temperature was not requisite, and yet the bottom temperature got lower than was desirable. Mr. Fleming replied that it seldom occurred; and when it did, that they put on a brisk fire, filled all evaporating-pans on the pipes with water, and gave an additional quantity of air. I mention this more particularly, as the same correspondent makes enquiries about Pines. Nothing could be more robust than those at Trentham; the plants near the glass, with plenty of air, short and stubby, but with leaves as stiff as pokers. Still, in small gardens, where a range of pits must have many different tenants in a season, I should prefer having the top and bottom-heat separate, and to be put off and on at pleasure.

One or two more suggestions, and, for the present, we leave the subject. A friend lately told me, he saw nothing of the simple or the novel in all this; that he heats a pit with a good-sized tank underneath the bed, and that he has funnels back and front, with lids to let up the heat at pleasure. And this he calls marching on in the way of improvement! Why, we have managed pits, and houses, exactly on the same principle, the best part of an age ago, by means of the old smoke flue passing through a rough-formed chamber. The same plan would just be more safe with pipes—and the question between them and the tanks would resolve itself into the double question of first cost and ultimate economy. As to any novelty in the principle of heating, it is more seeming than real. In either case, you *must* have bottom-heat before you can have top-heat.

Another says, "Well, if the principle is not new, there is a novel application of it in my case. Beneath the cover of my tank and the water level are openings left for the steam to escape from the hot-water, and by the time this gets into the air of the pit, through the funnels at the sides, it is so sweet and mild, as must be the very identical moist atmosphere you are always recommending for grafting greenhouse plants, and pro-

pagating all kinds of cuttings." There is force in this statement, if the place was used entirely for propagating, and you could calculate on the weather. But, if it was cold and misty, you would have to shut your funnels, or you would have more than enough of moisture; and you cannot have top-heat direct without it, as you cannot get underneath your bed to stop up the vapour-holes. Here, again, for most purposes, I would prefer pipes, as a dry or a moist heat, which, even with the heating power all beneath, may be commanded at will.

It will be perceived, that in speaking of tanks and pipes for bottom heat, I have been supposing general circumstances, such as preclude easy examination of the bottom-heating medium. When used inside a house, so as to be easily examined, with slides to shut at will, so as to give top-heat, or bottom-heat, dry or moist heat, at pleasure. Then, for many purposes, tanks are extremely valuable. There is a prejudice in their favour, so far as obtaining moist heat is concerned. I have seen many very economical ones well suited to amateurs who do not wish to spend much. A substantial one may consist of stout slate for bottom and top, and two bricks on the bed, for sides and centre. A small one, not intended to carry much weight, may be of common house-slate, bedded on clay puddle on solid earth; and, when that is set and dry, the upper part cemented over, while one brick, on edge, set on the slate, cemented at the joints securely, and receiving a coat all over, would constitute the sides. Single or double slating would then constitute a corner, some of which might be movable. With the exception of two or three feet of iron piping at the small boiler, lead pipes would do to connect the boiler and tank. This, with a careful man, would be a useful, but a gingerbread, rickety affair. There is nothing that either of these tanks can do that pipes cannot accomplish, if enclosed in a box or mass of rubble, with fine matter on the surface. Three, four, or six-inch pipes would be required, according to the heat wanted and the space to be heated. The nearest ironmonger, or any wholesale house, or hot-house builder, can tell you the price; and I think you will find them not only as good, if not better, but cheaper in the end than tanks. Until lately, good pipes could be obtained at from 9d. to 1s. per foot. Use none less than three inches, as, when less, the amount of friction lessens the circulation.

CALCEOLARIAS FOR BEDS AND BASKETS.

A very successful gardener in Kent, in an interesting letter, states,—that he strikes his Calceolarias under hand-lights; and has this season, as well as the last, kept them thick in these glasses all the winter. He adds, "whenever the weather settles, I plant them out in a temporary pit or bed until bedding-out time." This is another confirmation what an amount of moisture, and cold too, short of actual frost, these plants will stand uninjured. Many who lose these plants in winter, from their kindness in giving them *warmth* and *dryness*, might have been led to imitate the success of our friend, if they had noted what had been said of the native localities of such plants on the hill side of Peru and Mexico. The same correspondent tells us, he finds that pricking-out in these intermediate beds answers better for the plants ultimately than coddling them up in pots. I generally so manage everything that has fibrous roots—and many that will not be induced to make such roots, we wrap with a little earth in a handful of moss, and then place them in this preparatory bed to receive the necessary amount of protection until the middle of May. Multitudes, when planted last season, had the white roots peeping all round through the ball of moss, and were thus easily moved and planted, moss and all.

HAND-LIGHTS *versus* LARGE FRENCH BELL-GLASSES.

It is said these latter can be procured in Paris for 7½d. Will no glass merchant try to make them, and advertise the size and price, at which the bell-glasses, strong enough to bear a *clink*, can be procured? An immense sale would take place at double the French price, or nearly so. When Mr. Forsyth was at Alton Towers he launched his satire against hand-lights. They have long been the most expensive, unsuitable, ever-ricketty articles about a garden. Just set a few labourers among a score or two, and we will give you great credit for equanimity, if you do not, like brother Jonathan, feel a choking desire to *rile* a little. Between the tool, and the iron-pointed toe of the workman, and these brittle ware, there seems to be an uncontrollable attraction. If kept at all in their present shape, we would make the bottom part of wood or iron. But these large bell-glasses are the thing, and once supplied, and there is a demand for early productions, see if English gardeners will not use them as well as French ones. For protecting tender plants they would be invaluable. R. FISH.

PELARGONIUMS.

(Continued from page 502.)

I have received from Mr. L. T. Fleming, the Honorary Secretary to the Eastern Border Horticultural Society, the following very excellent descriptive list of Pelargoniums, classed in numbers as shown at the exhibition mentioned. I think, with my respected friend, the amateur is too often imposed upon by flaming descriptions of new florists' flowers in the catalogues published annually; but it must be borne in mind that there are societies in London who give prizes to, and thus give a character to, such flowers; and though I do not assert that all others that have not had that stamp of merit put upon them are valueless, yet the raisers of really good varieties should send their productions to such societies, and thus have a sterling character given to them. Next week I shall finish the list, by adding such new varieties as have come under my notice, different to those mentioned by Mr. Fleming. T. APPLEBY.

A DESCRIPTIVE LIST OF PELARGONIUMS exhibited in those collections to which either a first or second-class prize was awarded at the Horticultural Society's Shows, May 8 and June 12, and at the Royal South London Floricultural Society's Shows, May 20th and June 23; shewing also the number of winning collections, (dealers and amateurs), each particular flower was exhibited in.

	Number of different collections exhibited in.
<i>Rosamond</i> (Beck), rich rosy purple, white centre, dark spots	7
<i>Constance</i> (Foster), rosy lilac, clear centre, large trusser, free bloomer	7
<i>Gulielma</i> (Beck), clear blue purple, white centre, fine shape, and constant	7
<i>Alonzo</i> (Foster), rosy purple, light centre, dark blotches	5
<i>Magnificent</i> (Foquet), rich rosy vermillion, dark blotches, free bloomer	5
<i>Ajax</i> (Hoyle), rosy purple, margined vivid crimson	5
<i>Rowena</i> (Turner), rosy pink, large crimson spots, white centre	5
<i>Star</i> (Beck), rich rose, crimson maroon spots, white centre, profuse bloomer	4
<i>Norah</i> (Foster), dark maroon, upper petals; lower petals, purplish; pink white centre	3
<i>Pride of the Isles</i> (Luff), dark, free blooming	3
<i>Salamander</i> (Gaines), scarlet, clouded with violet	3

<i>Prince of Orange</i> (Hoyle), rich orange scarlet, small dark spots	2
<i>Mont Blanc</i> (Story), pure white, small pink blotches	2
<i>Virgin Queen</i> (Arnold), white, rich plum coloured upper petals	2
<i>Alderman</i> (Bragg), dark scarlet crimson maroon, blotched	2
<i>Mochanna</i> (Hoyle), lower petals, warm rose, white centre; top petals, dark blotch	2
<i>Magnet</i> (Hoyle), scarlet crimson, dark blotches	2
<i>Pulchra</i> (Foster's), lower petals, salmon rose; large dark blotch on upper petals, with margin of rose; white centre	2
<i>Cuyp</i> (Beck), claret, light margin	2
<i>Aspasia</i> (Gaines), upper petals nearly black, with rose belt; under petal rose, veined with crimson	2
<i>Narcissus</i> , rosy crimson	2
<i>Pearl</i> , white, spotted	2
<i>Rubens</i> (Foster), crimson, and dark maroon blotch on top petals	2

The following were shown only once in winning collections:—*Ganymede*, *Beatrice*, bottom petals mottled rose, upper petals black, margin of dark carmine; *Bertha*, *Emily*, *Forget me Not*, *Orion*, *Falstaff*, *Peerless*, *Electra*, (Gaines), rose, white centre, rosy purple bottom, large; *Ariadne*, petals rich dark, top petals margined with rose, white centre; and *Little Nell* (Turner), rose lilac bottom petals, maroon top petals; *Enchantress* (Foster's), rosy crimson, bottom petals crimson; blotch on top petals, with crimson margin; *Magnet* and *Ganymede* have had first-class certificates; and *Enchantress*, *Ariadne*, and *Rubens*, have had certificates of merit awarded them by the National Floricultural Society.

The above list of Pelargoniums shown at four of the principal Exhibitions in the neighbourhood of London, during the last season, will, I believe, prove interesting to the admirers and cultivators of this flower. It may also be an assistance to amateurs in the country in selecting for the ensuing season.

It does not follow that those flowers which have been shown in many collections are superior to those shown in few; yet it may safely be assumed that they are good varieties, and worth the attention of all who have not already got them.

Several of those marked in the above list as having been exhibited only in the one collection have scarcely passed out of the hands of the raiser, and cannot, therefore, be shown by many; but being considered worthy to be shown by such growers as Turner, Dobson, Gaines, &c., I think they may safely be depended upon. If they have proved themselves to be first-rate, they will be oftener shown at the next Exhibitions, and then may be more cheaply and more confidently purchased by the amateur. It will be interesting to observe which of the above are shown at future exhibitions, and which will never be heard of again.

Year after year, hundreds of seedlings are brought forward with fine names and long prices, a great portion being no improvement on varieties already out; the consequence is, after much care and attention is bestowed upon them, they ultimately lead to disappointment. How disheartening it is for the amateur to be so deceived! Take, for instance, the case of an amateur seeing somewhere an advertisement of some flower, to which such a description is given that he thinks it is perfection itself; he strains a point, sends off his money and order for it; receives a nice little plant, attends to it diligently, and anxiously watching every leaf as it comes out, at last the flower truss begins to be formed; now then, thinks he, for the reward of all my toil; the flower opens, but what does he see? Very probably a fac-simile of one he already has, or, perhaps, one he would not have wished for as a gift. His labour is

thrown away, and he almost gives up cultivation in disappointment and disgust. To prevent such occurrences, the lists given by Mr. Appleby will do much, as they include none but what have proved to be good varieties, and sufficient description being given to enable any one to choose distinct sorts, the amateur may have no hesitation in selecting from them.

L. T. F.

CONIFERÆ.

(Continued from page 483).

SECTION OF PINUS WITH FIVE LEAVES IN A SHEATH.

PINUS LAMBERTIANA (Mr. Lambert's Pine).—This truly noble Pine was named by Mr. Douglas, the discoverer, in honour of the late A. Lambert, Esq., the learned author of a Monograph on Pinus. It is a native of the north sides of the mountains of California, growing there 200 feet high. The branches droop downwards beautifully, rendering the tree very ornamental. The cones are very long, frequently from eighteen inches to two feet, and are like the branches, pendulous. The natives use the seeds as food, eating them roasted, as we do the sweet chesnut, and pounding them into cakes, which they eat as bread in winter. They use the resin also; when it exudes from the partly burnt wood it becomes sweet, and is then used as sugar. In addition to these good qualities, this fine tree is perfectly hardy, having stood the severe winter of 1837-8, but it does not bear so well a full southern exposure; it should, therefore, be planted on the shady sides of our hills, or on the north side of more tender species.

PINUS LEIOPHYLLA (Smooth-leaved Pine).—A Mexican Pine, with smooth green leaves and cones, with the scales at the top quite entire. Though a handsome tree of considerable size in Mexico, it is unfortunately too tender for even the more favoured spots of this country. Any one wishing to cultivate it must place it in a cool conservatory.

PINUS MACROPHYLLA (Largest-leaved Pine).—Mr. Hartweg, whilst travelling on or over the mountain Ocotillo, met with only one specimen of this fine, large-leaved, and long-coned Pine. It is very rare in consequence, and, therefore, its hardihood remains to be proved.

PINUS MONTEZUMÆ (Montezuma's Pine).—A fine, tall tree from Mexico, and, consequently, rather tender. In the fine Pinetum belonging to W. R. Baker, Esq., at Bayfordbury, in Herts, there is, perhaps, the finest specimen of this noble Pine in Great Britain. There are also some fine trees of it in Devonshire. I would not, however, advise the venturing it out further north without protection. The variety named *P. M. Lindleyi*, is more hardy, and even more beautiful. I observed, two years ago, a nice young tree of this variety in a rather extensive Pinetum lately formed at the beautiful seat of Lady Ramsden, at Byram Hall, near Ferrybridge, in Yorkshire. The excellent gardener there, Mr. Tinker, has laid out and planted this Pinetum with great taste and judgment, and the Pines seem to grow very luxuriantly in a maiden loam, upon a subsoil of a limy character. Both the species and the variety have very long leaves and large cones; the variety has the leaves of a very silvery hue which renders it very handsome and conspicuous.

PINUS MONTICOLA (The Mountain Pine).—So named by the late Mr. Douglas, the celebrated botanical collector. It has short leaves compared with the rest of this section, but is still a very beautiful tree, with shining-brown bark. It is hardy.

PINUS NIVEA (White Pine).—Mr. Booth, of Ham-
burgh, has this Pine in his collection, and has so named it from its very silvery leaves. It is a native of the

north-west coast of America, and is, consequently, able to endure our severest winter. It is as yet, however, very scarce, and very little known.

PINUS OÖCARPA (Egg-shaped Cone Pine).—Another Mexican species, with cones in the shape of an egg, and leaves nearly a foot long. Like many species from that country it is rather tender, but will bear the climate of Devon and Ireland. In the north it must have the protection of the conservatory, or have a tent set up over it to screen it from severe frost. There is a variety named *P. Oöcarpoides*, but it is very little known.

PINUS ORIZABÆ (Orizaba Pine).—So named by Dr. Lindley from its native habitat on the mountains of Orizaba, in Mexico. It is about as hardy as the last-named species.

PINUS PARVIFLORA (Small-flowered Pine).—Named and described by Sieboldt and Zuccarina, authors of the "Flora Japonica," as a tree growing in that country (its native habitat) from twenty to thirty feet high; it was introduced into this country in 1846; but whether it is hardy or not remains to be proved;—probably it is.

PINUS PSEUDO-STROBUS (False Weymouth Pine).—Native of Mexico, and rather tender, but will live out of doors in Devonshire and Ireland.

PINUS RUSSELLIANA (Russell's Pine).—Dr. Lindley has named this fine species in honour of the late Duke of Bedford, a great patron of gardening. At Woburn, the family-seat, there is a very interesting Pinetum. His Grace, with a truly patriotic spirit, printed for private distribution his splendid work, the "Pinetum Woburnense," thus making better known these useful and ornamental trees, rivalling in its usefulness the "Gramineæ Woburnensis," a standard work on the grasses of this country. *P. Russelliana* is a native of the Real del Monte in Mexico. There is a good specimen of it in the Chiswick Gardens, standing near a fine group of *P. Gordoniana*, *P. Lindleyi*, and *P. Devoniana*. These specimens are nearly five feet high and very well clothed with healthy foliage.

PINUS STROBUS (True Weymouth Pine).—Well known as a very hardy, elegant, smooth-barked pine. Being a native of Canada, it is perfectly hardy, though when young, and in exposed situations, the leaves in such a season as this turn rather brown. There is in the Floetbeck Nurseries, at Ham-
burgh (Booth), a shorter-leaved variety, named *P. S. compressa*. Also there are the following varieties, *P. S. alba*, with whitish leaves; *P. S. nana*, the dwarf; and *P. S. umbraculiferæ*, the umbrella variety. All handsome and worthy of cultivation.

PINUS TENUIFOLIA (The slender-leaved Pine).—A rather tender species, from Central America. It has lived for several years in the climate of Cornwall, and would thrive in the south of Ireland. Being a delicate-leaved, elegant tree, it is worthy a place in a lofty conservatory.

PINUS WINCHESTERIANA (Marquis of Winchester's Pine).—A fine species from Mexico, but not quite hardy, excepting in the most southern counties.

This concludes the genus Pinus which contains a great number of the finest trees in the world distributed over its surface, from the north of Siberia to Japan, including the mountains and vallies of the western hemisphere. This single genus alone would form a beautiful Pinetum, containing some species with the finest and most beautiful foliage. There are a considerable number of species yet to be introduced, and the following, though under name in catalogues, are very little known; even their native habitats, excepting the first-named, are yet to be found out. *P. aracanensis* (from Chili), *P. Columbia*, *P. Caroliniana*, *P. lyrata*, *P. blanco*, *P. maritima trocata*, *P. neglecta*, *P. Nootka-tensis*, *P. Parmentiera*, and *P. Wilkinsonii*.

T. APPLEBY.

WINTER BROCOLI.

AMONGST the many things on which a hard winter brings destruction, there are few of more importance, in a culinary point of view, than Brocoli; and nothing is more lamented than to find that a plot of what promised to form useful heads in succession, are either entirely killed, or so much injured that only a part of them will live, and these only produce heads less than half the size they ought to have done. That a system of protection capable of preserving large quantities of these out-door vegetables may be established in the gardens of the wealthy we have no reason to doubt, since we are told of a garden where hot-water pipes are employed to heat large tracts of ground cropped with Asparagus and, probably, other things; but as most of the class of readers to whom this publication is intended have not the means to furnish such an expensive apparatus, we hope to give them some hints about the vegetables which form the subject of the present chapter, which may enable them to meet a hard winter with less danger than they would if quite unprepared for it.

It is well known that the injuries which severe or oft-repeated frosts do to plants of this section is such as often leaves those previously healthy and vigorous without a single leaf unmutilated. In this, as well as many other instances, it is not the youngest that suffer most, for the older leaves seem still more affected, so that at the last, when mild weather sets in, the foliage presents a fringe of dead or dying matter all around its margin, which too often increases, so as, eventually, the whole will die, leaving perhaps only a very small tuft of small leaves at top to maintain the plant in a state of wretched existence, and to bring forward and protect the embryo-bud, which we, in common phrase, call "the head." In many instances this latter duty is too much for the crippled energies of the plant, and it falls a victim to the season which has been too severe for it. We must endeavour to forearm our readers against this.

Where large breadths of Brocolis are grown, to serve the daily wants of a large family, a sufficient number of kinds ought to be planted to keep up a regular supply the whole winter, beginning at a time when the Cauli-flower "goes out," and continuing till it "comes in" again. This important object is, however, more difficult to attain than the "seedsmen's" labels to their seeds would lead us to expect, though some go to the length of pointing out a certain week in which each kind will come into use; and from much the same authority some calendars report the exact day that each plant blossoms at, but as the season has an important effect on the growing crop, as well as on the germination of seeds, it is easily to perceive that a variety intended to come into profit in the middle of April cannot by any means do so when the preceding month, or more, has been so severe as to check and retard, if not absolutely kill, many of the plants intended for use at that period; so that, unless some other means have been adopted, it is not unlikely but a blank appears, which it would be difficult to make up by any other substitute equally popular at table; every means, therefore, calculated to improve the varieties we have, or rather to increase their hardihood, must be regarded as a boon, and with that object in view we throw out the following hints.

Severe as a winter sometimes is, still there often happens "a something" to escape its ravages: these survivors, therefore, show, in unmistakable language, that they possess the power to withstand the cold and other vicissitudes of the season in a remarkable degree, while their fellows, with the same advantages, were killed outright, or irreparably injured. It is, therefore, to such plants as escape that we urge the improver of our garden produce to look for securing seed from; for though it may not happen that the whole progeny from

such parents may possess their extraordinary hardihood and other good properties, yet it is likely a considerable portion will do so; while the remainder are most likely better than the produce of seed collected indiscriminately.

Now, though the above remarks are more especially directed to the selection of good Brocoli plants for seed after a hard winter like the past, yet they hold good in regard to other good qualities that individual plants may occasionally possess. It is no unusual thing for gardeners, on looking over their stock of Brocoli in April, to notice (amongst a number all coming into use at one time) certain heads of a superior description, which they at once determine to save for seed. This is all very well, because it is probable the produce will be good also; but we ask them, if a really good kind coming into profit in February is not more wanted than spring kinds? When, therefore, a good, firm, useful head shows itself at the latter period, forming, perhaps an isolated one, that is the one to save as the parent of a useful family. It is true, we cannot expect, under ordinary circumstances, such fine "heads" in February as at the end of April, yet, such as they are, they are more really useful, and, consequently, deserving more attention in the shape of improvement. As might be expected, the kinds most in repute at table are not the best to endure hard weather, but we hope to see the system of hybridizing carried out so far as to give to the delicate *Walcheren* all the hardihood of the *Dwarf Danish*, and similar kinds; retaining its own useful property of coming into use throughout the winter. This cannot be all accomplished at once, and, doubtless, some well-intended experiments that way may end in disappointment; but the subject is assuredly as deserving attention as that of hybridizing flowering plants, with the almost certainty of returning to the same point again; whereas, in this case, the ideal "point of perfection" lies so remote, that much improvement may take place before any check need be put on the score that further advancement is impossible; and, as the past severe weather has thinned the ranks of many of our most promising winter and spring vegetables, there seems a good opportunity of benefiting by those that are left. To our younger friends we, therefore, say, look-out for anything very good; and more especially so, if the majority are sufferers, as there is, in that case, more merit with the survivors.

SUNDRIES.—There are few things which may not now be sown with a fair prospect of success; and, under ordinary circumstances, the ground is expected to be in a condition fit to receive any such crops, while the germination of the seeds is, perhaps, more certain now than at any other period, the droughts so common at a later period making this less certain than now. Experience has taught, that certain crops, to come into use at a time when their utility will remain unimpaired for a considerable lapse of time, a certain season must be chosen in which the seed may be sown with a certainty (barring accidents) of its doing this. For instance, the useful *Coleworts* or *Cabbages*, so plentiful in a general way at this season, must have been sown with a judgment balanced to a nicety, for if the sowing had been too early the young brood will run to seed in March; and to delay it longer than the proper period, a proportionate lateness in the produce will be the result. Now, though we cannot well sow *Brussels sprouts*, *Curled* and *plain Greens*, and the whole family of that class, too soon in the spring, yet, in very cold bleak districts in the north of the kingdom, this is done sometimes in the August of the year before, without their running to seed during the summer, which they would be sure to do were that process repeated in more favoured latitudes; but, as we have said, the ground being now in a condition fit to receive anything and everything that may be committed to it, we advise that all work delayed by unavoidable circumstances be forthwith done; and

though some things may necessarily be a little later by the delay, yet it often happens that the impulse given to vegetation by the "setting in" of fine weather, is such as often enables the later sown to overtake the earlier, that our young friends need not yet despair by their labours being delayed a week or two by adverse weather and other things.

Before dry weather fairly sets in, let the *walks* be carefully looked over, and the *edgings* put to rights, and the walks themselves well rolled, adding new gravel, if necessary. Before this be done, it is advisable to break up the old to the depth of an inch or more, in order that the whole may go down into one solid mass, and the new not shell off, as it sometimes does, when not united to the understratum. This operation of rolling, &c., ought not to be delayed longer than to allow the worst frosts to be over; and it ought, likewise, to be done when the walk is wet, rather than otherwise, except that the top may be slightly dried, to prevent its adhering to the roller. If it be done at the right time, the chances are that the walks keep good all summer; and we know of nothing which adds more to the beauty of a garden, or grounds, than sound and well-kept walks; and their keeping in such order is a much less difficult matter than many would suppose, if due care be taken to do what is needful at the right time.

J. ROBSON.

AGRICULTURAL OPERATIONS FOR APRIL.

THE preparation of land for *Barley* will now occupy the farmer's attention; and the practice having become general to sow *Barley* after *Turnips* upon all dry soils, in almost every county in England, it has also become a matter of great importance to ascertain how the land can be best tilled, so as to produce the greatest quantity of grain fit for malting purposes.

It is well known, that the nature of the soil has a great influence on the quality of *Barley*; but, sometimes, the peculiar preparation of the land has a prejudicial effect on the crop upon soils naturally favourable to its production. This is especially the case where land has been highly manured for *Turnips*, the crop being consumed on the land by sheep, eating oil-cake and hay in addition. The natural effect of this management is to bring the land into a highly fertile state. If it be now ploughed two or three times, with sundry harrowings, and rollings, before the *Barley* is sown (although it is a common practice), it cannot be considered necessary for the success of the crop, because the treading of the sheep in feeding on *Turnips*, upon all light soils, is most essential, in consolidating the land, enabling it to retain the manure, and to withstand the drought of summer; therefore, the effect of repeated ploughings, &c., is calculated to diminish the benefit derived from sheep-feeding, to increase the expense of tillage, and to delay the time of sowing. In a forcing season, it will be found too encouraging to the growth of straw; whereas, in a dry season, the *Barley* will vegetate partially, and, in consequence, produce an uneven, edge-grown crop, unfit for malting purposes; and the clover seeds, which it is usual to sow amongst the *Barley*, will often suffer from the same cause.

It will be found the most desirable plan to pursue, in order to counteract the effect of this high tillage, to plough once only, deep enough to bring up a little fresh earth, and sow a reduced quantity of seed, at the earliest period the land can be made to work freely. The best time for sowing *Barley* will be found from the middle of March to the middle of the month of April; a sample of malting *Barley* cannot be depended on, in ordinary seasons, upon any soil or situation, after this period; and it is a general rule, that early-sown *Barley* will produce the best quality, although not always the greatest quantity.

It is somewhat difficult to say which are the best sorts of *Barley*, as almost every county in England has varieties adapted to its soil and climate, ascertained by the practical experience of the cultivators of each particular district.

Yet, it may be well to name some of the kinds most in general use; amongst which will be found, the *Chevalier*, *Leghorn*, *Nottingham*, *Red-bearded American*, and *Thanet*. The *Chevalier* *Barley* certainly stands highest in estimation for malting purposes, and also as best adapted for the climate of the eastern and southern counties of England; it also gives the best return when grown upon the lightest soils, but is apt to lodge upon good land in high tillage. The *Nottingham* and *American* varieties are best suited for good loamy soils, and best adapted to the climate of the north and western counties; they will both yield upon rich land, a longer and heavier crop of straw, without lodging, than the *Chevalier*, or most other kinds. The quality of the grain of *Nottingham* *Barley* is often good, and fit for malting; but the *American* is usually somewhat coarse, and better adapted for grinding, or distilling purposes. The *Moldavian* possesses advantages we do not find in either of the other sorts, the grain, being particularly small and short, commonly weighs heavy, and is much esteemed for malting. It is also a good yielding variety, and known to possess the peculiarity of producing a sample fit for malting, when sown at a later period than most other sorts. It has been known to produce good malting grain at the rate of six or seven quarters per acre, when sown the second week in May.

The quantity of seeds required will range from six to sixteen pecks per acre, being regulated by a variety of circumstances, such as early or late sowing, sowing broadcast, drilled, or dibbled. When sown broadcast upon poor soil not highly manured, and at an early period, from fourteen to sixteen pecks will be required; when drilled upon land in good tillage, from ten to twelve pecks will be found an ample allowance of seed; when dibbled, two or three grains should be placed in each hole—the distance seven inches one way, and four inches the other: the object of dibbling being that of saving seed, and giving an opportunity to hoe, and eradicate weeds, particularly charlock.

Barley does not answer for thin seeding so well as most other grain, by reason of a thin plant tillering so much as to cause it to ripen unevenly, oftentimes diminishing the produce, and rendering the sample coarse and flinty, and unfit for malting purposes.

The period has now arrived when it is desirable to look forward and decide upon the quantity and kind of *Manures* required for use upon the land intended for root-crops; therefore, the sooner the manures are purchased and stored away, or prepared for use, the better, as it often happens when the order for manures is delayed until within a few days of the time appointed for its application, unforeseen circumstances arise which prevent their being obtained, and delay, with loss of crop, often ensues. This is the best time also for digging *peat*, or *paring borders for burning*, in order that the supply of ashes, so essential for mixing with artificial manures, may be in readiness when required. I usually obtain a quantity of *bone-dust* about this time, and prepare it for drilling with *Turnips*, &c., by mixing soft yellow sand or loam with an equal quantity of bone-dust, adding water until it begins to run from the heap, then turning two or three times, mixing carefully, casting the mass into a conical heap, with a slight covering of sand, and allowing it to remain until required for use. At the end of about six weeks, the bones will be found in a decayed state, and the sand highly impregnated with ammonia, forming, with the addition of superphosphate of lime, an excellent manure for the *Turnip* crop, particularly upon soils deficient in sand.

Bones may also be treated in the same manner with ashes, if the nature of the soil does not require sand applied; but it will be found upon most land of a loamy kind, where *Turnips* have been sown repeatedly, that the sand will have a most beneficial effect, it being a maiden earth, and much in use by gardeners for plants in the infant state, hence the advantage to be derived by root-crops, all the plants being so small and tender in their first growth.

In answer to a Subscriber, enquiring the proportions of *Pigeon* and *Fowl-dung*, with water, to be applied for *Turnips* by the liquid-manure drill; three or four hogsheads of water to six hundredweight of pigeon or fowl-dung will be found sufficient for an acre; the mixture may be made with advantage a few days or weeks before it is required for use, the liquid and dung being drilled altogether; it would, at the

same time, be highly desirable to add to the mixture two hundredweight of superphosphate per acre; for I have found that upon all soils, except those abounding in chalk or gravel, that a crop of Turnips, of the best quality, cannot be grown, from the application only of manures rich in ammonia, like pigeon dung, guano, &c.; for although a heavy crop of roots may be obtained, yet they will be liable to rot, and are deficient in nutriment, as compared with roots which have been grown from manure containing a fair portion of bones or superphosphate.

In connection with the subject of Pigeon and Fowl Dung, the mode of saving and storing for use is important, both with regard to the health of the poultry and the value of their manure. I have for many years used dry ashes strewn over the floor of the poultry houses every two or three days; by this plan the manure is deodorised, and in a state fit to be removed and stored away for use, as often as cleanliness requires; at the same time, there is no offensive odour arising to injure the health of the poultry; and the lice and flees, so much opposed to their well-doing, are thereby entirely destroyed.

JOSEPH BLUNDELL, *Bursledon.*

TO CORRESPONDENTS.

GARDEN CROPPING (R. H. G. M.).—We do not admire your mode of cropping, which, however, may be unavoidable at present; but, for the future, try to have your beds or rows of the different crops all pointing one way, and if your plot be too large to allow a whole bed of any separate article, it may be made to serve two or more kinds of plants of as uniform growths as possible. Thus, one bed may be divided into a number of pieces, and each sown with a separate kind of Broccoli, Cabbage, Cauliflower, &c., the appearance of the whole being so much better when something like a uniformity of cropping takes place.

FRUITS (R. H. G. M.).—Your lists of fruit are very good for a small plan, and cannot well be improved, unless by any additional variety which experience has proved to be suitable to the neighbourhood you live in, which may be better than any other we can recommend. As your gardener may be acquainted with such, it would be well to consult him on the matter, supposing more kinds are wanted.

PLANTING FRUIT-TREES (R. H. G. M.).—Trees planted against walls must, necessarily, have their roots in front of them, as there is no room backwards, unless the wall is built on arches, consequently, spread them out as you would the top, *i.e.*, in a fan-shaped manner; but trees on a trellis may be planted with their roots radiating in all directions, and they will push themselves on to the quarter where most nourishment is to be had. Where the understratum of a walk is of favourable materials for the growth of trees, a few of the roots may be pointed that way, as it will relieve the border to the benefit of other things.

WALKS (R. H. G. M.).—You are quite right in breaking all large stones used in your walks, but this is less important than when there are wheel carriages expected to work. In a usual way, four inches of stone, and two of gravel, will make a walk as firm and sound as ought to bear for a time the thoroughfare of a city. But as everything depends on the quality of the gravel, &c., you have by you, we advise you to reserve the best for the top only, and it is surprising how very little of that serves the purpose. See some of our back numbers on the subject.

LEG SPASMS IN SHANGHAES. (G. F. D.) thus describes this affection: "It commences with a peculiarity of gait; the bird which died, and the one I killed, strutting, lifting his feet high up, spasmodically, and stretching far forward in his stride, somewhat resembling a horse with 'string halt.' This continued for about a fortnight, while he preserved his appetite, and apparently his health (there was a difficulty of swallowing, however, indicated in the present case, which did not appear in the first). The bird after that period began to refuse his food. I kept him warm, and administered one or two doses of castor oil, with no beneficial result. He would take nothing, and wasting away, I at last put an end to him." [The spasmodic action of the legs indicates a tendency to that inflammatory state of the brain and nervous system to which Cochins appear particularly liable, while the symptoms, which appeared subsequently in the first case, appear to show a chronic disease of some or other of the digestive organs; but it is impossible to state the exact nature of the disorder, as the enumeration of symptoms is far too meagre: correspondents should state every symptom. It is impossible to offer satisfactory advice without knowing the whole of them. In this case, if I might hazard an opinion, I would recommend one-grain doses of calomel every two or three days, which would cause increased secretions from the internal organs and so relieve the head, and plain unstimulating food, as barley-meal, boiled rice, &c.—W. B. TEGETMEIER, *Tottenham.*]

PHALÆNOPSIS LOSING ITS LEAVES (Phalænopsis).—Your plant of *Phalænopsis* has lost its old leaves, and the roots are decaying. Your treatment appears to be right, excepting, perhaps, you keep it too moist through winter. Do you dip the block and plant in too warm water? Give it a rest by withholding water till fresh roots are formed. You have done quite right to place it on a fresh block of wood. The flower-spike you should cut off immediately, as any weakly plants will be injured by flowering too much.

CINERARIAS FOR EXHIBITION (Tyro).—You have *Effie Deans*, *Pauline*, *Cerito*, *Mr. Sidney Herbert*, *One-in-the-Ring*, and *Climax*. The following six would be a good addition to your present stock:—*Fairy Queen* (Henderson), *Lady Araminta* (Henderson), *Lady Hume Campbell* (Henderson), *Magnum Bonum* (Ayres), *Marianne* (Henderson), *Tyrian Prince* (Cole), deep blue.

PULLET EGG-BOUND (An Old Subscriber).—When a pullet is egg-bound with her first egg, I should attribute it to deficient size of that

portion of the egg-passage which the egg has to pass through after having received the shell. I do not think any treatment likely to prove successful. A somewhat similar case recently occurred in one of my own fowls. A Dorking pullet laid her eggs, which were small, evidently with difficulty, and they were generally smeared with blood; after laying, the end of the passage protruded, and, latterly, considerable discharge of blood occurred; nevertheless, she laid regularly. Being a very promising bird, I did not wish to kill her, therefore I cooped her for a few days, feeding her on rice and turnip, which contain so little egg-forming materials, that she ceased laying directly, and having apparently recovered, I have turned her out, and am watching the result.—W. B. TEGETMEIER.

FOWLS LOSING FEATHERS.—O. says—"I have some Spanish fowls, and some Shanghaes that are losing the feathers from their breasts, leaving the skin quite clean and smooth, like the back of a person's hand; otherwise they appear in perfect health. They lay an egg each, nearly every day. They are fed in the morning with barley; at noon with boiled potatoes and Indian meal mixed; in the evening with oats. They have the run of a grass field. They are lodged warm, dry, and airy. They are chickens of last year." [From the wholesome food and advantageous circumstances in which these fowls are placed, and their appearance of perfect health, I should be inclined to suspect some local cause, but it is very difficult to guess at the right one. May it be a sharp, angular perch? or do the hens pick off the feathers, &c.? If O. suspects some disease, as it is slight, I should advise a change of diet: boiled rice might be substituted for the Indian meal and oats—the former being oily, the latter rather more nutritive and stimulating than barley. Should these simple means prove ineffectual, a three-grain *Plummer's pill* might be tried; but I am always averse to medicine when it is possible to avoid it.—W. B. TEGETMEIER.]

HEN EGG-BOUND.—E. M. says—"I have lost a very fine Cochins-China hen. She was hatched last spring, and began laying about October or November, and wanted to sit at Christmas, but we thought it too early. She began to lay again about ten days ago; and after laying a very large egg, she was found dead on the nest, the bowels having come out." [In this case, death was evidently owing to a disparity of size between the egg and the egg-passage, the latter having been forced out in the act of laying. The case is somewhat similar to that of one of my own pullets recently spoken of. Nothing can be done by way of prevention; and the only cure would be breaking the egg, by introducing an instrument into the egg-passage—not an easy operation at any time, and quite impracticable to those not well acquainted with the anatomy of the bird. It is an accident not likely to recur.—W. B. TEGETMEIER, *Tottenham.*]

MOWING MACHINE (Quercus).—Budding's Patent Grass-cutter has been in use all over the three kingdoms for more than twenty years, and is as much approved of as any machine in or out of Liverpool during that time; but, like all machines, it will go out of order in time, or by bad usage. It requires a good stout lad to pull it, and a man with a true eye to guide it.

EPIPHILLUM (A Constant Reader).—The best "properties" for a seedling of this kind of Cactus, is to be very easy to grow, much easier to keep, and to be richer and larger in the flower than any of the old ones. If you get all these "properties" in a seedling, you need not mind whether the petals are round or smooth on the edges, or square, or shaped like a triangle, with rough edges, or edges in and out like the waves of the sea, for you will be sure to sell as many of it as you can grow. If we could but get a square flower on any seedling, we should get more money for it than if it was the best round flower. Then the question is shape or money!

FERN-LEAVED BEECH (J. K. A.).—It is, indeed, very rare to see or hear of this, or the common Beech rooting its branches which touch the ground. We have never heard of such a self-layering of it before, but we have seen other trees equally hard to root do the same, namely, the Larch Scotch Fir and Birch.

ROSE-COMBED DORKING'S REMONSTRANCE.—"Sir,—I felt considerably affronted by hearing the other day that a correspondent of yours, styling himself 'Cochin,' had pronounced me a 'Mongrel.' I beg to assure you, Sir, that I am as purely bred as your friend 'Cochin,' and that my father and proud mother, and their progenitors for many generations past, have come down with rose combs on their heads. In the opinion of some of the best breeders, and most approved judges in England, I am so far from being a Mongrel, that I claim the right of being the original Dorking, whilst my single-combed cousin is the Mongrel. Whilst I have been pluming myself in the belief that my children will carry away the prizes at the next Birmingham and Metropolitan shows (*i.e.* if they can outlive the six days confinement of the former), it is rather hard to have the public mind prejudiced against them by a passing nickname. I pray you, Sir, as a lover of fair play, to tell Mr. Cochin that there is no ground for his assertion; and I remain your obliged friend, A ROSE-COMBED DORKING."

SEEDLING FRUITS (C.).—If I had an orchard house, and was desirous of raising seeds of fruits, I should certainly like to raise them in pots the first year in that structure, taking care to plunge them out-of-doors from the early part of July until the end of August, when I would take them in again, to insure well-ripened wood. The second season I would, in the beginning of March, plunge the pots over-head in rich loamy soil, prepared for them in some warm nook of the garden totally unshaded; they would here "run to wood," as it is technically termed; and in the middle of October I would carefully take them up and repot them. The roots will have escaped the pot, bottom and top, and the check in repotting would bring on a short-jointed habit. The old pot would have to be smashed like as in orchard potting. I hold that a sudden check after a rapid growth is the surest way to hasten fructification. In the third season I would plunge out again, after being somewhat forced into wood, say in the middle of June, getting them in the orchard house in September, to ripen the wood. Doubtless, "C." knows that the fruiting may be hastened by grafting on the extreme points of old and highly fructiferous trees. The mere primings, however, might be thus employed.—R. ERRINGTON.

HEATING A VINERY (Clericus).—We really cannot imagine the precise state of your case. You say, a vinery 121 feet long by 21 wide, and about 7 feet high, "forming the span-roof over other buildings." It is impossible to know what available space or position there may be for heating apparatus. All we can say is, that if yours were an ordinary

span-roof, just of those dimensions, a Burbidge's boiler (good sized), with a flow and return pipe of five inches diameter along two sides and one end, would be quite sufficient. Surely you would be suited in Birmingham, both with apparatus and any further practical information.

STOVE (E. W. K. H.).—You will find it very expensive to divide your house longitudinally. Why not across? We should have no objection to east and west—the Pines at the boiler end, as requiring most heat; and for that purpose you might have a flow of greater calibre up to the division, or two flows to empty into one at that point, if not necessary farther. Your Pine-bed in the centre may be for three rows, and these should be ten feet wide. By all means have a hollow path to receive fermenting material. About your tanks, we should fear leakages: will they endure? We fear you would find some difficulty about removal. Why not agree with your landlord beforehand?

LENGTHENED TIME OF SITTING.—*Evesham* inquires—"Whether Shanghaes are longer than the common hens before they hatch? One of mine, which ought to have hatched on the 15th, produced some of her first chicks on the 17th, and her last one on the 18th, in the afternoon. Another, whose time of hatching was the 17th, produced the first on the 19th, and the last on the 21st. Another, due on the 8th of March, hatched on the 11th. The last one I am going to name hatched one on the 26th, and I found seven fine, full-grown chicks dead in the shells; their time for hatching was the 23rd. The eggs of the whole were fresh laid, or nearly so, and, I should observe, were from pullets. (Are the chicks weaker on this account?) It appears to me, the shell is very much stronger, as also the skin under, than the common egg. The last-named hen was a peculiarly good setter, and was never off her eggs, except a few minutes each day, having wire-work before her, as such they could not have been chilled." We think that the shell, and its inner lining, of Shanghae eggs are rather thicker than those of Dorkings and other kinds, but then the chickens are stronger in proportion. Chickens from pullet's eggs are almost always weaker than those from hen's eggs. Usually the Shanghae hen hatches at the end of the twenty-first day, but this season we can add our testimony to yours, that pullet's eggs have been longer in hatching this spring. Thus, one hen sat February 14, hatched March 9; and another sat February 18, hatched March 14.

HOTBED (A 5-months Subscriber).—If you refer to the Index we publish to-day you will see that in the back numbers there is all the information you need. Your master being a tanner, you can have famous pits heated by tan. The ashes of tan are a good dressing for pastures, put on thinly in the spring. Old fine tan-siftings is a very good application to heavy soils, rendering them open and more workable.

ORCHARD-PLANTING IN NEW ZEALAND (W. C. Lynn).—Put yourself in communication with R. Hogg, Esq., Secretary, Horticultural Association, 28, Southampton-street, Covent Garden. We have sent your papers to him. He will be able to aid you in many ways.

SHANGHAE COCKEREL (T. J. W.).—If the legs of this bird are rendered useless by rheumatism, keeping for ten minutes the legs in water as hot as bearable, with a little mustard mixed in it, and having the bird in a dry, warm place, on generous diet, will probably restore him. If it arises from paralysis, probably nothing will restore him.

GRIMSTONE'S EGYPTIAN PEA (A Young Gardener).—We do not know the address. Mr. Grimstone will perhaps advertise.

LARGE BELL-GLASSES.—G. S. G., and many other correspondents, will have seen in our last number that no English glass manufacturer has yet made any. The first one who gets into the market with them will reap a good harvest.

FLOWER-BED COLOURS.—E. S. F. says—"I am glad you seem to consider that the plan of trying the colours of flower-beds with wafers of similar colours likely to be useful; but it might prove more so if tried on green paper as near the shade of grass as possible, and which I am sorry I did not send them on." This is a very good suggestion.

TOPIARY WORK.—A Clergyman, whose direction we have, obliges us as follows—"Sometime since, a lady inquired in your columns for any person who had topiary work to sell. An old man in my parish has a very fine Yew peacock, aged sixty years, which he would sell for a few shillings. In case this meets the eye of the inquirer, she may have my direction from you."

POLYANTHUS-GROWING (Ibid).—"As my treatment, as regards growth, has been very successful, I give it here. In July, a friend gave me some seedlings with leaves almost as large as my little finger-nail; six of these I placed in five-inch pots, filled with pure fibry loam, the decayed parings of a rich meadow; they remained under the stage of the greenhouse, in the wet and drip, perpetually moist, till November, when they were placed on a shelf close to the glass. The plant from which the enclosed pip is picked has three trusses; and one of these, the only one as yet expanded, twenty-three pips, and the pit is entirely hidden by the profusion of leaves. It makes a much prettier table-plant than I could have supposed.—SIGMA." [The pip was lost by some one opening the letter.]

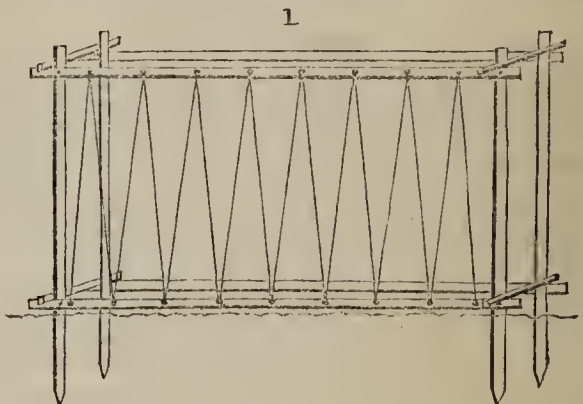
RIDGE AND FURROW ROOFS (A Novice).—The advantage of these for houses and pits are that you get more morning and afternoon sun, and the heat and light strikes less fiercely at mid-day. For pits for general purposes we would prefer the old-fashioned system. In borders with fixed roofs we would prefer the ridge and furrow, but as fine things have been got of the shed roof as out of those of the best construction.

PINE AND STRAWBERRY PRODUCE (Ibid).—"Will Pine plants produce fruit five or six times in succession?" Yes, if you grow on the Hamiltonian system; but understand it before you commence. Mr. Fleming, though he plants all out, throws away his plants whenever they fruit, and supplies immediately with a young one. "Will old Strawberry plants last as long if well supplied with manure water?" Yes, especially if you thin out the smaller buds every season when the fruit is gone, so that what is left will have plenty of light and air; but what benefit would be gained? We prefer three years at the utmost, two in general, and thus we effect rotations better.

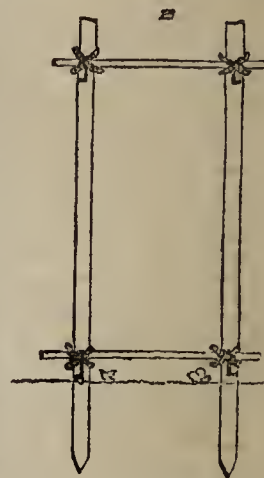
CAMELLIA CUTTINGS (E. C., Bromhead).—The gardener at C— (we will not betray confidence by giving the place), who told you they should be struck in oil, deserved to be well soused in that commodity. In the case of your favourite plant, now sickly, which you are so anxious to perpetuate, we should advise you to graft or inarch upon a young stock as detailed the other week. To make doubly sure, choose a few of the healthiest shoots of last summer's growth, and before the buds begin

to push, cut across at a joint, there removing the leaf, and leaving the bud and leaf above, and insert in sand under a bell-glass, in a nice bottom-heat. Mr. Fish glanced the other week at making a cutting from every bud. The following is the process, and which is generally very successful:—Choose well-ripened shoots of last summer's growth, from early in autumn on to the period in spring, before these shoots begin to push their buds. Cut clean across with a sharp knife, one inch below each bud, and in a sloping direction upwards, immediately above it. Do this with every bud on the shoot. If the leaf at the bud is very large it may be reduced. Then take up each cutting afresh, and just below and opposite each bud, insert your razor-knife again, and so split the cutting as to remove nearly the half of its bark and wood. A large space of alburnum and liber is thus exposed for roots to be protruded from. They are then inserted thickly in pots, three-parts filled with drainage, the rest sandy peat, surmounted with pure sand, and the pots are placed where they can be kept shaded, in a close atmosphere, and moderately warm. If they can enjoy a mild bottom-heat, from dung or otherwise, they will like it. Many put in in early autumn would be fit to pot in April. Those inserted in winter and spring would be fit in autumn and the following spring. Something of this mode is generally adopted for raising stocks.

PEA SUPPORTERS (S. H.).—These are thus described and depicted in our first volume. We have had them in use now without repair for three years, and can strongly recommend them. The only alteration we find desirable is that, instead of having the supporters fixed upright, as in these sketches, they should lean inwards, and their tops touch in this manner A. We paid sixpence for each hurdle of unplanned deal, and had it painted over with coal-tar. "For the purpose of obtaining a more durable, and, therefore, less expensive supporter for peas, we have had a



kind of hurdle made, with only a top and bottom bar, and these bars pierced with holes, six inches apart, as drawing, No. 1. To prevent confusion in this, we have only shewn one of the hurdles as pierced with holes, and with string passed through them; but, in practice, both are strung alike. Each hurdle is five feet long, and three feet wide between the two bars; for tall-growing peas the width might be more. The upright ends are made of deal, and are four feet long and two inches square. Eight inches of the lower ends are charred and pointed, because they have to be fixed in the ground. The side bars are two inches wide and one inch thick, also of deal, sunk into the uprights, and then nailed. The peas are sown in double rows, with a space of nine inches between the rows. The hurdles are strung with stout wetted string, because when dry it becomes tighter, and rain does not slacken it afterwards. A hurdle is put outside of each row of peas, and is made steadier by being tied to the one next to it, and the whole made firmer by being united to those opposite, by pieces of wood about one foot long, tied as shewn at No. 2."



AMERICAN FOWL (R. W.).—A considerable mixture of Malay blood appears to exist among the large-sized fowls that under different names have been recently imported from America. The form and colour you describe might very possibly have been derived from a cross of this breed with what is known as the Columbian fowl; but with all the erratic forms of cross-bred birds, it is impossible to speak without a far more detailed description, and even then the complicated union is not easily unravelled.—W.

GOLDEN-SPANGLED HAMBURGH COCK (H. R. Venn).—The breast of the golden-spangled Hamburg should have the spangle in full perfection.—W.

RYLOTT'S FLOUR BALL POTATOES (R. Bosworth).—Enquire of Mr. J. Turner, Parkwood Springs, Neepsend, Sheffield.

EMPLOYMENT (T. Sheely).—We should have plenty of applicants, if we could insure "employment to live by," near London, to any one emigrating from your neighbourhood—Tipperary. When we know of a suitable place you shall hear from us.

NAME OF FRUIT (M. R.).—Your Pear is the *Easter Beurre*.

LONDON: Printed by HARRY WOOLDRIDGE, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published by WILLIAM SOMERVILLE ORR, at the Office, No. 2, Amen Corner, in the Parish of Christ Church, City of London.—April 7th, 1853.

WEEKLY CALENDAR.

M D	W D	APRIL 14-20, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In						
14	TH	Kentish Glory; trees.	30.262 — 30.171	73—29	E.	—	8 a. 5	52 a. 6	0 15	6	0 15	104
15	F	Brindled Green; wood sides.	30.174 — 30.076	60—41	E.	—	6	54	1 13	7	0 0	105
16	S	Marvel du jour; wood sides.	30.037 — 29.987	52—25	E.	—	4	56	2 3	8	aft. 14	106
17	SUN	3 SUNDAY AFTER EASTER.	29.957 — 29.837	56—31	N.	01	2	57	2 41	9	0 29	107
18	M	Common Blue (larva).	30.010 — 29.763	50—34	E.	01	0	59	3 18	10	0 43	108
19	TU	Studded Blue (larva).	30.096 — 30.069	48—20	N.E.	—	1V	VII	3 45	11	0 56	109
20	W	Black-spot Brown (larva).	30.118 — 30.043	59—21	S.W.	—	56	2	4 8	12	1 9	110

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 57.4°, and 37°2. respectively. The greatest heat, 71°, occurred on the 17th in 1844; and the lowest cold, 20°, on the 16th in 1847. During the period 99 days were fine, and on 83 rain fell.

No one but those who have either tried, or watched the experiment tried by others, can appreciate the immense amount of good (a diminished expression would not be near to the truth) that can be accomplished by one head and one pair of hands. The secret of achieving such large success lies in employing that head and those hands discreetly. If we required any authority to sustain this opinion, we need only refer to the Proverbs of Solomon, for there "discretion" is paramountly held up to his son as one of the mind's most desirable attainments. We will venture, however, to quote one other authority, and it is these words of the Psalmist, "A good man sheweth favour and lendeth: he will guide his affairs with discretion."

Now, we are not about to compose a homily upon these words, but we have before us so powerful an illustration of their truth—we know so many who might confer never-ending benefits by following the example, and it is so replete with interest in all its details—that we hasten to place them fully before our readers.

There are very few to whom "Child's Night Lights," and "Price's Patent Candles," are not familiar, and after reading what we are about to narrate, we shall be pretty certain that those who employ them will think with us that there is a brighter, pleasanter look about their flame, and a happier tint about their light. We so feel, because "the good man who lendeth" is the manager of the manufactory where they are made; what he lendeth are his admirable thoughts and judgment for the permanent improvement of the artisans under his control, and no one will refrain from agreeing that he has, indeed, "guided his affairs with discretion." The name of this exemplary man is Mr. JAMES WILSON, and the success of his efforts to improve the entire condition of the boys and men employed in the manufactory was so very manifest, that in the spring of 1852, a committee of the Company's Directors was appointed to inquire into the course he had pursued, and it then became officially known that he had spent £3,289 of his own money in his successful efforts to improve the mental and moral, and, consequently, the temporal condition of those under his management. We must now let Mr. Wilson be the chief narrator, taking our extracts from the report which the Directors had requested him to publish.

"The schools began in a very humble way by half a dozen of our boys hiding themselves behind a bench two or three times a week, after they had done their day's work and had their tea, to practise writing on scraps of paper with worn-

out pens begged from the counting-house. The foreman of their department encouraged them, and, as they persevered, and were joined by others of the boys, he begged that some rough moveable desks might be made for them. When they had obtained these, they used to clear away the candle-boxes at night, and set up the desks, and thus work more comfortably than before, although still at great disadvantages, as compared with working in any ordinary school-room. My brother encouraged them with some books as prizes, and many who had been very backward improved much in reading and writing. The fact of the whole thing being the work of the boys themselves seemed to form so large a part of its value that we carefully abstained from interfering in it further than by these presents of books for prizes, and of copy books, spelling books, and testaments, and by my being (but not until long after the commencement, and after being much pressed and being assured that it would cause no restraint) always present at the school meetings to give them the sanction of authority, but taking no more active part than hearing the most backward boys their spelling.

"The first half-dozen had now increased to about thirty, and it had become very desirable that they should have some better place in which to have their school meetings, that in which they then held them being dirty, exposed on all sides, and moreover requiring every school evening considerable labour to clear it sufficiently for the putting up of the moveable desks. Now there was one part of the factory which we had long looked upon as very dangerous in case of a fire occurring. It was a tall and rather old building of which the three upper stories consisted of two very low store rooms and a loft, with a very heavy wooden staircase running all the way up but boarded off from the rooms. We gutted all the upper part of this building, clearing enough old wood to have burned down half a dozen factories if it had once caught fire, and making in place of the two lower store rooms, one lofty schoolroom, with an iron staircase up to it, and big enough for about 100 to work in. It is the lower one of the two rooms which you examined on Tuesday night, and there were ninety boys at work in it at the time. The making of this room was the first really heavy expense connected with the schools. I have very exact accounts of the whole expenses of these, and have tried according to your wish to divide them so as to show the expense of each part, and in this division I make the construction and furnishing of this room amount to £172. If we had the same thing to do again, we could, with our present experience, do it a good deal cheaper; but, nevertheless, I look upon the benefits resulting from this room as out of all proportion to the expense incurred. Of this sum £57 was a payment to the company itself, for its expenses in making the alteration of the building.

"It was in the winter of 1848, that the boys got into the first school-room, still working entirely by themselves, so much so that the prayers, with which the school closed, now that the separate room had set them free from the bustle of the factory, were always read by themselves. But the school had more and more difficulty in working itself in this way. The increase of numbers made one difficulty. Then the very attention of some of the boys to the schooling made another, for they presently found that they had exhausted all the powers of instruction which the school possessed, and therefore left it, some few of them to look for better evening schools out of the factory. Then many of the elder boys of the factory had now joined the school

and, being much more impatient of controul than the younger ones, brought with them a necessity for a stronger government than they could themselves supply. Even a committee of themselves, appointed at a general meeting held for the purpose, failed to secure respect. It was not until after a very full trial, and until the school was getting quite into disorder, that the principle of self-government on which it started was superseded, at the earnest request of all the best of the elder boys themselves. Since that time the school has been worked entirely by authority, although the exercise of this authority is often guided by a general vote, as for instance, in all cases of fixing the days and hours for schooling. Just now a proposal to attend school four nights a week, instead of three, during eight months of the year, in order to make holiday the four best summer months, has been carried by a majority of five to one.

"We got into possession of the new room for the purposes of the evening school in the winter of 1848. In the following summer we availed ourselves of it to remedy an evil which we had long felt in the factory to some extent, and which, with the increase of the night light trade, and consequent increase in the number of young boys employed, was now becoming serious. It is better that the night lights should be made not long before being sent out; and, as the demand for them varies greatly, it is often necessary to take on a number of additional boys in a busy time, and then to let them go again when the demand slackens. In very many cases they were taken away from schools to come into the factory, but frequently did not go back to school again after once being at work, but idled about and learned bad habits in the streets, until we could employ them again. The new room enabled us to start a day-school, to which to send up young boys when not wanted in the work. There is still great difficulty with the elder ones, those who would be quite out of place in an ordinary day school, and are of an age when they ought to be working, and not schooling, in the day time. Many of these have to leave us every spring. But with all the younger ones the difficulty has been completely got over from the time of starting the day school. They pass from factory to school, and from school to factory again, at a moment's notice, according to the variations of the work, and are equally well employed, and equally forming good habits in each, and are kept in the same discipline in the one as in the other.

"To return to the evening school. In the spring of 1849, the best of the boys, and those most anxious to learn, were hard at work in their new room, but they were a minority of the whole number of boys in the factory. The success of the school with those who came of themselves, of course made us anxious to get into it all the others, many of whom were more in want of the schooling than those who came. When you remember that the hour-and-a-half of schooling was always after a hard day's work, you will not wonder that the boys did not all offer themselves. Compulsion being out of the question, the course we took was to try to join on some harmless pleasure to the school, and also to make a marked distinction between those who did, and those who did not, belong to it; not by putting disgrace upon these last, but by putting honour on the others—so as to make those who did not belong to it begin to feel that they were losing something good. With this view, we repeatedly, in the spring and summer of 1849, asked all the school to a tea party in the new room. The first tea was an interesting one, from the fact that very many of the boys had not been at anything of the sort before, and that many of them not being then in the habit of going to church, had never, perhaps, put themselves into decent clothes at all. Those who came untidily or dirtily dressed to our first tea, feeling themselves out of keeping with the whole thing, tried hard to avoid this at the next party. I hope that to several our first tea was the occasion of their taking to neat dressing for life. I will just mention here, that so far as our experience goes, there is not with boys, as there is with girls, any danger whatever in leading them to think much of their dress, for, the more they attend to it, the nearer they get to plain black. Almost all our best boys now come to the chapel in plain black, though not a word has ever been said to them, or required to be said, about their dress. One evening last summer a friend who had met a troop of them on the way to one of our cricket matches, asked me after-

wards, whether the boys he had met could be our factory-boys, as they were, he said, more neatly dressed than his public school-fellows used to be. By the help of these tea parties, we made the boys who did not belong to the school feel awkward and uncomfortable about not doing so—and very many joined; several, however, stipulating, that they were not to be asked to the next tea, lest that should be supposed to be their motive for joining. The total expense of the tea parties, from the first to the present time (including a Christmas one given each year to the boys of the day school, and last year one to the girls also) is £53, a very large sum, but I think most profitably expended. We have, however, given over anything of the sort for the elder boys, having now much better attractions in the prize books, cricket matches, and summer excursions.

"It was on Easter Monday that our first tea party was held, partly in order to try our powers of attraction against those of Camberwell and Greenwich fairs, both of which are within reach of the factory. Ours were the stronger, both then and on the Whit-Monday following.

"In following up our plan of combining as much pleasure as possible with the schools, the next step was to teach the boys cricket, yet it was anything but a pleasant occasion which decided the time of beginning this. In the summer of 1849 the cholera came, and it was fearfully severe in Battersea Fields and the lower part of Lambeth, where numbers of our people live. For a time the first thing every morning was to compare notes, as to the relations whom the men and boys had left dead or dying on coming to work, and in the latter part of the time no doctors were to be had, as they were all knocked up. Before it got very bad we got good medical advice, as to whether any precautions against it were possible for our boys, and decided, that fresh air and exercise out of the factory were the best preventives. We, therefore, closed the school entirely, and a gentleman (Mr. Symes) having most kindly let us take possession of a field, which was waiting to be occupied by a builder, we set to work hard at learning cricket after working hours. I say learning, for cricket is not a game of London boys of the class of ours, as was proved, by the fact of hardly any of, even the elder ones, knowing anything at all about it when we began.

"I do not like to pass this part of my story without noticing how everybody's heart seems to warm up directly towards such an object as ours when applied to for assistance in it. Mr. Symes had never seen me, nor I him, when I went into his office to ask him for his field; but when the case was stated, his answer was, 'Certainly, for such an object, I shall be delighted to let you have it until I am obliged to turn you out for building;' so I got the field, and the beginning of a most true friendship beside. Afterwards, Mr. Graham, who holds a great part of Battersea fields, also an entire stranger to me until I called on him on a similar errand, no sooner understood it than he told me of all the land he had, and the terms on which he held the different pieces, and offered to let me pick what I chose out of the whole; and we have had very many minor instances of this readiness to help us.

"The cholera seems an odd reason for taking to cricket, but I dare say the cricket had a very happy effect on the general health of our boys, and so may have strengthened them against catching it. We lost only one (an amiable and well-conducted boy of seventeen), although many of our boys lost relations living in the same houses with them. Always when the game was finished, they collected in a corner of the field, and took off their caps for a very short prayer for the safety from cholera of themselves and their friends; and the tone in which they said their amen to this, has always made me think, that although the school was nominally given up for the time, they were really getting from the game so concluded, more moral benefit than any quantity of ordinary schooling could have given them. They also met every morning in the school-room at six o'clock before beginning work, just for a few minutes to give thanks for having been safely brought to the beginning of the day, and to pray to be defended in it.

I will bring the account of the cricket down to the present time before going on to anything else. In 1850 we played on the same field three nights a week, working in the school on the other three nights. I arranged to take it on a ten years lease, but a builder stepped in just before the

lease was settled, so we lost it after the end of the year; but in the winter we got possession at a rent of £40 a year, of a very rough and unenclosed field of six-and-a-half-acres, not very far from the factory. We got this levelled and fenced in, and sown with grass seed, and a little bit of it laid down with turf. Being so large, we were able to allot out a large portion at the edges for gardens, besides keeping plenty for cricket in the middle. Almost all the boys set to work most eagerly at the gardens, though some of them just barely knew which end of the spade should be downwards when in use, but very many, perhaps not much short of half, did not persevere, but either neglected their pieces altogether (in which case they were reallotted), or let them get into a more or less slovenly state. The others, however, kept their eagerness, and with some it seemed to get stronger, the more they worked. Even this imperfect attempt for a single year, has, I hope, given to some of the boys feelings and tastes of which they had no idea before, and of a nature to have a most softening influence upon them. Some buildings are now interfering with our present field, and this has made it doubtful, whether, if we were to try both gardens and cricket there this year, we should not spoil both. We have decided to give up the gardens; but we hope to get a separate piece for them elsewhere, for their effect upon those who really took to them was too valuable to be lightly given up.

"All last summer we worked hard at the cricket the three evenings in the week on the new cricket ground, and on the other evenings we gave the men the use of it. The boys played very eagerly, and many of them became tolerable cricketers. They were divided into four classes, and the different classes played matches with each other, with of course unequal numbers. But what gave the game its greatest start, was that some of the boys took it into their heads to send a challenge, that twenty-two of them would stand the eleven of a cricket club, formed by a few of our men, who, having been cricketers before coming to the factory, had joined themselves together to keep up their practice of the game, as they best could, on Kennington Common or elsewhere. Some of this eleven being pretty good players, and knowing what novices our boys were, they treated the challenge with great contempt; their captain saying, I believe, when they received it, that he would be happy to play the twenty-two himself. But the boys practised very hard till the day of the match, and when it came, to the great astonishment of themselves, as well as of all the rest of the factory, they beat the men in one innings. Later in the year they beat them again in a return match of sixteen to eleven, and in the coming summer they mean to try eleven to eleven. They are looking eagerly forward to the 1st May, on which day we propose to begin the cricket again, and they will I hope have a happy summer of it. As already noticed, it has been determined by a general vote of their own, to have an extra school night weekly, during eight months of the year, in order to enable them to make holiday during the four summer months, May to August. I am glad of this alteration, for it always went against one's conscience to shut them up in the school-room for an hour-and-a-half on a beautiful summer's evening, after a hot day's work in a factory, and yet, till we got our own play-ground, and sufficient attraction in cricket and gardening to draw them to it, there was only a choice of evils, for to turn them out to amuse themselves in the streets, was very likely to get them into mischief. In the chief cricket matches we have given a prize book with the score marked in the beginning of it, to each one on the winning side.

"The next thing to notice is the summer excursion. Our first experiment was on Saturday, the 29th June, 1850, when 100 went down to Guildford, starting by a train at, I think, half-past six in the morning, and coming back at nine at night. It was a beautiful day, and one of thorough enjoyment to them. Breakfast, dinner and tea were provided to eat on the grass. They strolled about the beautiful country in the neighbourhood of Guildford, played what was then our only cricket match of the year, the apprentices against the rest of the factory (for in the then state of our cricketing a match did not take very long to play), and in the middle of the day the clergyman of the little church on the top of one of the hills, with a lovely view round it, who

had been begged for the use of the church, kindly came and did his part of the service, the boys, their books having been brought with them, chaunting their part as they do in their own chapel. I had not felt at all sure how far this might chime in with the other proceedings of the day, but it did so most perfectly, partly, no doubt, through their having had plenty of the running about first. The church service was a quiet and resting pleasure in such a place, and under such circumstances, between the two divisions of the active pleasure which was the chief object of the day. The country about Guildford is so really country, so absolute a contrast, in its quietness and extreme beauty, to all the common life of these boys, that one felt what a world of new ideas and feelings they were being introduced to; the very many of them, at any rate, who had never seen anything like real country before. From the way they looked at and spoke of the country to each other when there, and spoke of it after returning, I am sure many of them, if they live till ninety, will remember that one day, and with a feeling more beneficial to their minds than any which months of ordinary schooling would be likely to produce."

In 1851, the excursion was "on a grander scale" to Herne Bay; and in 1852, by special invitation from the Bishop of Winchester, to his residence at Farnham Castle, each excursion being even more gratifying than its predecessor. The proprietors met in March, 1852, and resolved unanimously to devote £900 a year to the maintenance of the educational system then in operation; they further resolved to devote £300 a year "to provide means of public worship for such of their work-people as chose to avail themselves of such means;" a chapel has been erected, and a chaplain appointed; the educational system is maintained; the cricket, the gardening, and the excursions are to be resumed this summer; and we most gratefully join in these words, addressed to the Company by the Bishop of Winchester: "Your Board will have the honourable distinction of being not only the first to point out, but to carry out in detail, the true principles on which the reciprocal relations of master and dependant can most advantageously be observed, and by attention to which the largest amount of mutual benefit can be derived by both parties."

In conclusion, let us record the ennobling facts, that the proprietary voted that Mr. Wilson should be reimbursed the whole of the money he had expended, and that he accepted it only on condition that the entire sum should be employed on the erection of a chapel within the walls of the factory.

Such acts as these could be elevated by no commentary; they dignify all the co-operators, and again demonstrate that there is a course where trade is not altogether selfish, and how fully benefits and blessings may be exchanged between the employer and the employed.

COVENT GARDEN.

THOUGH not a prognosticator, Covent Garden Market is at least an indicator of the state of the weather. No sooner have we 4° or 5° of frost than all is bare, bald, and desolate; but when a change comes, and all nature is alive again, then we see the most sudden and fairy-like scenes pervading this most attractive of all gardens. And so it has been during the past week. There is now the greatest activity and bustle; thousands of

eager and admiring eyes, and objects of the most beautiful of nature's productions to gratify them. Whether it is the great change from what we have been accustomed to for some months past, or the effect which a return of spring and its associations call forth, we do not pretend to say; but we have felt, during the last few days, that we never saw a sight so fresh and fair as we have enjoyed during our visits to this scene of enchantment. We have already forgotten all about the frost and the snow, the hail and the sleet, which but the other day chilled and pelted us; and one feels in these visits as if we had for ever been living in a perpetual summer of beauty and sunshine.

The *Flowers* and *Bouquets* with which the market is now so abundantly supplied are of the very choicest description. To describe how they look, and the effect they produce, would be almost as impossible as to describe the finest and most pleasurable feelings that ever were called forth by the highest gratification which the heart ever experienced. But, perhaps, we are too ecstatic; all our readers may not feel under such circumstances as we do. These plants and flowers, however, are the only attraction the market presents. The fruit is poor, except some *forced Grapes* and *Strawberries*, and of these there are some very fine specimens. We must not, however, forget to notice a splendid collection of very fine *cut blooms of Roses*, from the great Rose-nursery of Messrs. Lave, of Berkhamstead. There they are in the beauty of summer, as fresh and beautiful as if it were June or July.

Vegetables are very scarce, as they have been for some weeks past, and as they are likely to be for some time to come. There are, however, some good specimens of *Lettuce*, forced, of course; and also a few very good *Cucumbers*.
H.

GOSSIP AND GLEANINGS.

A correspondent (AMELLUS) writing of *Bulb culture*, says "Whenever I have flowered *Crinum revolutum*, it has been in the greenhouse, *suspended*, with a pan under it always kept full of water.

"Temperature, I am convinced, has much to do with the *Belladonnas*. In Devon, their *dry* season is often a very wet one, and yet the *Belladonnas* flower regularly and plentifully. Begin to protect your leafing plants *early* enough; indeed, as soon as they show leaf. A top light alone is necessary to prevent radiation and to admit light at the same time. It is a good general rule to put on the lights when the plants *ought* to be resting, and take them off when they ought to show flowers, as the leaves in some individuals will remain green till they show flower, and a wet summer time is the principal thing to be guarded against.

"A *Sprekelia*, called *Karwinskii*, had a brighter coloured flower, and more tending to scarlet. It bloomed earlier than others put in at the same time; this might have been accidental.

"In the spring, pull out of the mass of *Zephyranthes candida* from six to a dozen of the largest bulbs; pot

these at once, say an inch-and-a-half apart till the pot is filled; plunge the pot in saw-dust, or the open ground, in an open situation, and let it remain till flowers appear. A few flowers will appear the first autumn. Winter in a cold frame, and in the spring give exposure as before. The next autumn the pot will be *just* full of roots and bulbs, and these will flower *profusely*, so as to look almost like a fine primrose in April. The buds rise almost simultaneously, and rapidly some day when we are not thinking of their coming. They will *never* flower *thus* in the same pot again. A succession, therefore, is necessary. A shift does not appear to be of the same efficacy, as bulbs and roots must be *just so much* crowded and *no more*." [This is an excellent suggestion. —ED. C. G.]

No variety of fowl seems so liable to *vagaries in laying* as the Shanghai. We had a letter from Mr. Horneastle, of Gray's, the other day, stating that one of his hens had laid a perfect egg with another perfect egg within it. We have *seen* a hen lay one perfect and one shell-less egg in rapid succession. We have another hen which usually lays a double-yolked egg once or twice a week, weighing more than $3\frac{1}{4}$ ozs., but then she misses laying the day following. We have already published one well-authenticated instance of a hen frequently laying three eggs in the course of the day, and now we have another instance, as is thus stated to us by Miss A. M. Goold, of Dreco Hill, Tyrone:—

"A Shanghai hen of mine laid, last week, three eggs in the four-and-twenty hours; two were hard, the third a *large* soft one. She had previously laid twenty-six eggs in twenty-seven days, and, after resting two days, has begun to lay an egg each day. She was hatched last April, being one from a set of eggs Mr. Punchard sent me. She began to lay in December, but I did not at first count the eggs, as other hens were laying with her; but at the time she laid the three eggs *all* the others were sitting. She will not be a year old till the 6th of next month. She is very large, and differs from any other hen in having *very* long *ear-lobes*. I have written this account as another proof of the extreme fertility of these beautiful birds."

In answer to a query we ventured to address to Miss Goold, relative to her *hen laying three eggs* in a day, she has favoured us with this reply:—

"I am quite positive as to the fact of the hen laying the three eggs in the twenty-four hours, and for this reason, that it was the only one *laying*, my four other hens had been sitting on eggs above twelve days. My old servant was the first to discover the fact, and she was afraid to tell me, for she thought the poor hen had been charmed by a *Banshee*,* and that it would never again lay an egg. Her droll superstition has, however, been dispelled, for the bird lays one every morning. It rested two days after laying the three eggs. Forty-one eggs in forty-one days, and not likely to stop."

Last week there was an advertisement in our columns of *Garden Labels*, which have since been tested slightly by exposing them to sunshine and rain for several days, and by these they seem unaffected. They are made of Gutta Pereha, and are attached to the tree or plant by Gutta Percha thread, which does not decay, nor is it hard enough to chafe the plant. The name of the plant is stamped upon the label. We are assured that they have been extensively and satisfactorily used near Colechester.

* *Banshees* are little old women that live in no very well-defined place in the air.

There will be, at Farningham, in Kent, near the Dartford Station, on 15th, 16th, and 17th of June, an Exhibition instituted by the *West Kent Domestic Poultry Association*.

"The great object of the Society in fixing the Exhibition in the middle of June being to encourage breeders in their endeavours to increase the natural fecundity and precocity of Poultry, so as to produce the most valuable descriptions for table, either by crossing various breeds or preserving their original purity, a grand prize of A GOLD MEDAL will be given for the best brood of six or more chickens of any breed, properly described, hatched since Christmas, 1852."

This is a good step in the right direction.

Several Essays upon the longevity of the three kinds of individuals of the Hive-Bee having been sent in for competition for the prize of five guineas offered by the *Entomological Society* last year, they were referred to a committee, who unanimously considered the Essay written by Mr. Desborough, of Stamford, as most worthy of the prize, to whom it was accordingly awarded. The Essay is now being printed for the Society's Transactions, but we understand that a limited number of copies will be printed for separate publication. The Essay contains much interesting matter of some novel facts in this curious branch of Apian science. The Society have again offered a prize of five guineas for the best general Essay on the species of *Coccidæ*, or *Scale Insects*, infesting fruit trees in this country, with an especial Memoir on the *Muscle Scale* of the apple tree. The Essays are to be sent to the Society on or before the 31st December next, with a sealed letter containing the name of the writer, endorsed with a motto corresponding with one on the Memoir itself.

PLANTING AN ORCHARD OR FRUIT GARDEN.

(Continued from page 498.)

HAVING disposed of the preliminaries of drainage, enclosures, water, walks, &c., we come now to a consideration of the staple of the soil, the correction of which, if requisite, was so strongly urged previously. Now, the correction or improvement of the staple is a thing that few care about carrying out, involving, as it does, a little extra labour at the onset. But, if a necessary procedure, how much better to do it at first than to postpone it; how much more economical to do it in the lump than in the piecemeal way.

It may here be explained where such a process becomes necessary. Some soils are so exceedingly adhesive, that they are worked with extreme difficulty: here the clayey principle predominates. These soils are very well adapted for fruit-culture, provided the subsoil is tolerably dry; when wet, they are only correctable at considerable expense, and with much uncertainty. To be sure, the fruit-trees may be planted on formed stations, improved specially for the kind of tree, and elevated, if considered necessary, much above the ordinary level. But, for vegetable culture, they are very inconvenient, even after ordinary drainage; and unless the latter operation be thorough, and the surface-soil duly improved,—which we have here termed "correction of the staple,"—vegetable culture is seldom satisfactory. Potatoes will be moist and insipid; the cabbages blue instead of green; choice salads will rot, and crops in general suffer much from the devastations of slugs and snails. Moreover, all operations as to culture, &c., are infinitely more difficult in execution, and more uncer-

tain in their effects. Ground dug a little beforehand for crops may require digging again, and the operations of the hoe may be rendered nugatory by a dashing shower.

Very light or sandy soils are, of course, the opposite extreme; here, instead of the food of plants being, as in the case of clays, in a state of comparative fixation, that food is constantly tending to dissipation. The adhesive principle is wanting, which is better imparted by matters containing the clayey principle than by any others. The faults of the latter, with regard to fruit-culture, are easily overcome by the introduction of sound loams into the stations. Vegetables, on such soils, are enormous wasters of manure; indeed, the soil itself is a waster through this want of fixity; and sandy soils may be said to require double the amount of manures in comparison with loams: in the extreme, they are practically termed hungry soils. On sandy soils unimproved, fruit is apt to become arrested in its growth in the middle of summer; and, indeed, if a severe drought occur, and continue, it is by no means unusual for a considerable portion of the fruit to be "cast." This arises from the limited supply of nourishment afforded during droughts; an amount not by any means equal to the demand. The young shoots, too, are apt to suffer through insects or leanness exercising a very baneful influence on the produce of succeeding years.

As to the effect of weak sandy soils on vegetable culture, they are, perhaps, better known than the effects from clayey soils. Observe the difference between a succulent Cabbage and a thin leaved one. Other vegetables, and especially salads, suffer immensely in weak soils; they become lean and leathery in severe droughts, and this is no recommendation to the salad bowl, especially as to Lettuce and Celery. It is of no use talking about extra manuring, when a deficiency of moisture exists both in the air and the soil, and a summer temperature prevails: all the manure imaginable cannot remedy the evil.

I may touch lightly on other soils, as the two dwelt upon constitute, with occasional modifications, the majority of garden soils. Peaty soils may be just adverted to: these are not often selected for fruit and vegetable gardens, but in order to make THE COTTAGE GARDENER meet almost every case, it becomes us to look thoroughly into each subject within our sphere of action.

Peat or boggy soils, in an unimproved state, are too puffy, if I may apply such term for high culture; and this elasticity is the result of the raw character of the organic matter of which they are chiefly composed. They, in consequence of their peculiar texture, neither receive air, nor part with water, in that degree which an active vegetation requires. Plants or trees receive much of their nutriment through the medium of decomposing organic matter in the soil; but those boggy or peaty soils are antiseptic in their unimproved state. It is obvious, therefore, that to be fertile, their character must be changed. Trees and vegetables, on this class of soil, if unimproved, always carry a sickly appearance; even our corn fields, where such land prevails, may be distinguished at great distances. Instead of the deep green of grain crops on healthy loams, we have a delicate yellowish green, with weak straw.

As nearly all other soils are some modification of the preceding, I will now proceed to show how, after thorough draining, if necessary, such soils may be readily improved in texture, preparatory to the establishment of a fruit and vegetable garden. To begin—*Adhesive Soils*, or those in which the texture is too stubborn, may be ameliorated by any or all of the following matters:—Sand, road-scrappings from gravelly districts, ashes of any kind, the rubbish from old buildings, the shovellings of the bank where brick-making is carried on, &c. These

are placed nearly in the order of their importance. These, singly, or in any order of combination, if well blended with the soil, will alter its character for ever, being imperishable in their nature. After such materials are incorporated, I would add plenty of old and thoroughly decomposed vegetable matter, such as any one or all of the following:—Leaf mould, charred peat or heath soil, charred saw dust, old tan, pond mud, and ditchings, when well mellowed and separated.

We must now come to the mode of their incorporation with the soil: this requires some care. The party about to proceed must not allow himself to be frightened at the commencement by the prospect of a good deal of extra labour—a good garden will amply repay him; a bad garden never can. Soils of this character should, if possible, undergo a few months' fallow previously to the introduction of the improving material. Those who have time, would do well to break it up in the autumn, whether by plough or spade; and after the winter's frost had mellowed it, to harrow it well down as soon as dry in the spring; and if still stubborn below, to plough or dig again, and shortly to harrow again; after which the improving material might be applied, and of course as much cultivation applied as will mingle the mass. Such a course, commenced in the end of September, and pursued at proper periods, without delay, might be complete for fruit-tree planting and vegetable cropping by the beginning of March; when, if our subsequent directions as to planting, &c., be pursued, no doubts may possibly remain as to ultimate success. As to the vegetable matter proposed to be introduced, any, or every occasion in subsequent culture may be taken to introduce such materials. It is well known that coarse clayey soils are apt to be deficient in those materials known to men of science by the term *humus*, meaning all and every kind of vegetable matter which has undergone that slow decay which, at least, reduces the body to a sort of black mould. I hold it good policy, in vegetable culture, so to prepare the soil as to promote a rapid root action; not only as ensuring luxuriant growth, but as hastening young crops out of the reach of insect enemies. Old vegetable matters are well known by good gardeners to be peculiarly efficient in this respect.

Thus much as to clayey soils. Let us now take the second section—*sandy or weak soils*. It need scarcely be observed, that these are the very antipodes of the former, and, of course, require a different treatment. Their want of adhesiveness must be the first consideration. The following are the most eligible materials with which I am acquainted to promote this principle:—Marl, especially what is called clay-marl; clay in a powdery or crumbled state; pond scourings, or ditchings from clayey subsoils, rendered mellow, &c. It is a singular consideration, that the clayey material employed has a constant tendency to "go down," as our farmers term it; in other words, they are readily soluble, and are carried down through the medium of the rains, in a state of solution, unto the first impermeable level they meet with. Now, we all know that in what are termed loams the clayey principle remains suspended; for what was a sound loam a century ago is still the same, and continues so. I name this by the way to show uninformed readers an evil they must expect, at least in the use of marl, and one for which there is no remedy, as far as I am aware. In confirmation of the preceding remarks I may just point to a notorious fact, well known in these parts—viz., that marl applied agriculturally on the surface is ever found in a stratum several inches below the surface in a few years after its application: thus marling becomes a periodical affair.

Now, the matter termed *humus* in the preceding remarks is as much required in these loose soils as in the clays; perhaps more so. It will be well, however, in

the case of texture improvements, to get the inorganic matters blended first, and then to add the vegetable matter, which may be done first, as in the case of the clays.

Now for *peaty soils*—by far the more difficult to correct thoroughly. There can be little doubt that such soils, if elastic to the foot, must be consolidated. Whilst they are in the elastic state the owner may rest assured that something remains to be done before they can be included in the class of fertile soils. Where such soils are deep in this peaty material, there can, I think, be little doubt that burning, or rather charring, may be resorted to as good practice; and the addition of marly or clayey materials, together with sand, or rubbish of any kind, becomes equally necessary to constitute what we may term true soil. Such proceedings combined will, with thorough drainage, render these soils permanently fertile; both fruits and vegetables will luxuriate permanently afterwards, and that in proportion to the amount of care exercised.

There are, doubtless, other materials eligible in certain localities, and other modes of proceeding with regard to them; and it becomes every one about to make new gardens, or orchards, to cast his eyes around, and see what materials are within his reach, for few can avail themselves of all the materials here enumerated. Here, indeed, lies the true economy of the affair—so to understand the matter as to be able to turn the most ordinary things to account as improvers; for it frequently happens that materials close at hand, and which, consequently, cost little, are despised, merely because they have lain a long time neglected, through ignorance of their real value if applied to special cases. By far too many treat the matter of texture, or staple, too lightly; a very common error prevails that manures are the only resource and hence a sad waste of such precious materials. I know as well as any man the value of manures as a super-addition; but to indulge in a profligate waste of them, irrespective of the texture of the soil, is by no means judicious. R. ERRINGTON.

BEDDING-OUT PLANTS.

For more than fifty years there was only one scarlet variegated Geranium in all England, unless the *Golden Chain* might be called *variegated*. The first bed of this scarlet variegated by itself, I ever saw, was at Dropmore, in 1830, and at the Deepden, in Surrey, in 1831. At that time, no one about London knew the *Golden Chain*, and there was not another *variegated Geranium* in the trade; but of late years other variegated kinds, both pink and scarlet, have appeared, and, to make a distinction between the kinds, the first is now called the *Old Variegated Scarlet*, and very often, in country nurseries, simply *The Scarlet Variegated*, which was the original name. It is only to be had by one of these two names; and I am quite sure that Mr. Appleby, or the officers of the Horticultural and Pomological Association, could procure it in the trade by the thousand, for the Association applies to the most respectable dealers, and hunts out any thing which appears scarce, or little known; and at all times, and under all circumstances, keeps a vigilant eye on rascals who impose on the public, for it cannot be denied that the most systematic frauds are going on, from one year's end to another, by means of advertising alone.

I have said already that I did not see a single instance, in the neighbourhood of London, where any one had succeeded in making a shot-silk bed with this old *Scarlet Variegated Geranium*. I have seen many attempts made, some of which were dead and disgraceful failures, because first-rate hands were entrusted with the planting and after-management, and all such

appeared to have forgotten the directions I often gave for doing the thing properly. Now that I am going to make a fresh start with beds and bedding plants, and all that concerns them and myself, I must, in the first place, forego the credit of having first named this bed. It was named to me incidentally by a gentleman, whom I found admiring it one morning before breakfast; he was a visitor at Shrubland Park; had seen it the evening before, and, having a painter's eye, he went out early to see the effect under a different state of the sun and atmosphere. "Well, Beaton, how in the world did you come to think of this combination of colours?" "I did not think anything about it, sir; it was suggested by Lady Middleton: how do you like it?" "Like it! I never saw anything in this way so beautiful; I have just written to Her Grace the Duchess of Sutherland to say how you plant here, and that you have one bed so planted as to look like *shot-silk*." All the parties are alive to this day, so there is no chance for me to claim the credit of planting or naming the shot-silk bed; all that I can say about it is, that there never was a better combination of colours made in one bed, and that of all the beds that one can make or think of, this is the best for a trial of skill. If I were engaging a first-rate artist in flower-gardening for my own hobby, I would merely question as to how he would manage the planting of a shot-silk bed in a new locality, that is, in any place where he never planted before. I would be at the bottom of his brains ere he was half-way through with his explanation, and if I thought well of him, he should *have his own way*, situation, soil, number of plants, and the exact ages and sizes of every one of them, and, by the middle of next August, I could judge if I had a good flower-gardener or not. I never yet met with a correspondent of THE COTTAGE GARDENER face to face, or by letter, who would act thus, that is, let a new man *have his own way for once*; and as human nature is the same all over the world and in among the cabbages, we can no more convince a man against his will, than force a gardener to success in a branch of his craft about which he is not allowed to open his mouth.

The second plant in the combination of a shot-silk bed is *Verbena venosa*, not *venusta*, as the printers put it in their dog-latin. Very old plants of the Geranium are the best, good bushy ones, all of one size, and from fifteen to eighteen inches high. If they could be all eighteen inches high, and bushy in proportion, and the bed for them to be nearly level, they ought to be planted just one foot apart all over the bed, and the outside row at just six inches from the edge. Plants lower than a foot, of the *Variegated Scarlet Geranium* are of no use for this bed; but at that height, and up to eighteen inches, they would answer, even were they single-stemmed; the only difference would be, that four or five times the number of bushy plants would need to be planted. Then the rule is this: plant with variegated scarlet Geraniums not less than a foot high, and so thick, that the outside leaves of all the plants nearly touch all over the bed the day it is planted—say about the 20th of May.

The *Verbena* is to be planted, according to the mildness of the spring, from the first of April to the first of May, unless the *Verbena* was prepared and potted in March, and kept in the pots until the Geraniums were planted, which would answer just as well, or better for amateurs. The number of *Verbena* plants it is almost impossible to determine, as that depends on the strength of the plants and the goodness of the soil in the bed; therefore, we must take the same rule as with the Geraniums, and say that enough of the *Verbena* is planted to cover the bed all over without Geraniums at all. Strong pieces of the underground shoots, or, as some would call them, roots of the *Verbena*, are divided every

spring for this planting, each piece about six inches long:—when the pieces are to be potted for May planting, all that is necessary is to double them, or coil them round an inch below the surface, but when they are to be planted at once into the bed the pieces need not be so long, and they may be planted in drills an inch deep, the pieces lying flat in the drills, which is safer than planting them with a dibble, as if the wrong end is put down, that piece seldom grows. When the two have grown a little, the dark green *Verbena* leaves cover the ground, and make a carpet for the naked stems of the old Geraniums; but before the ground is quite covered with the *Verbena*, a few of the plants will throw up a flowering-shoot, here and there, and they must be cut back to the level of the general crop. This is the first dressing; the second dressing consists of thinning the *Verbena*, if it is too thick, or thick in parts of the bed, and not in others, some of the *Verbena* plants may require to be pulled up altogether. The Geraniums require nothing to be done for them all the season, but the *Verbenas* must be gone over every ten days or a fortnight all through the season, and every time they will require some thinning and stopping. The first show of flowers generally require to be cut out before they are half open, as they come from the centre of the principals, and after these, flowers come from the side-shoots, which do not rise so high. When the flowers of the *Verbena* come too crowded in some parts they must be thinned; when the plants threaten to overgrow the Geraniums, pull them gently till you hear some of the roots snap, and that will check them for a time. In short, the eye and the hand must keep a constant balance between the *Verbena* and the Geranium throughout the season, and that balance should not let the *Verbena* flowers rise above the Geranium flowers more than three or four inches, while some of the flower-spikes of the *Verbena* ought to be on a level with the Geraniums, and some lower still, merely pushing up their purple points among the variegated leaves of the *Verbena*. Anything beyond this, or not up to it, must be a complete failure, as the shades never come without the balance; or if they do, and the *Verbena* is out of balance, your shot-silk will look as if it was stained with port wine, or with London porter, according to the degree of excess in the leaves, or in the flower-spikes of the *Verbena*.

As for the best situation for this bed, it cannot come amiss where a neutral bed answers best. It should not be placed too near to beds of *one colour*. The best situation for a silk-shot bed would be the centre bed in a group, in which all the beds were planted in mixtures of two or more colours or shades, as a bed of "fancy Geraniums;" a second of the florist section, as *Priory Queen*, *Sun-rise*, and the like; then a bed of *Mangle's Variegated Geranium*—the best of all the "variegates"—mixed with *Beauty Supreme Verbena*, as was done at Claremont last year, and is the next best bed I know after the shot-silk one. Three kinds, or, perhaps, two kinds would be better, of *Diadematum*, for another bed; three kinds of purplish *Verbenas*, of which *Heloise* would be one, might make another bed, and so on all round. I have, myself, attempted this kind of planting, but it requires some practice to learn the right kinds of growth and habit in the plants on different soils, as well as a knowledge of how the colours in the mixtures agree together. In fact, this is, or might be made, an improved mode of mixed beds or borders on the old herbaceous plant system, and is a very useful style in large places, both for making a variety in a scene, and for getting rid of odds and ends of plants which we often find it difficult to dispose of, and yet cannot use to any good advantage in regularly coloured beds or arrangements.

In making green permanent beds or stripes, a new

fashion, which goes to relieve the blaze of a large flower-garden fully as much as the neutral tints, *Daphne encorum* is one of the lowest and very best, during the short time it is in flower we must make up our minds to it, and the flowers will soon be over. A light sandy soil suits this best, and, indeed, all the *Daphnes*. *Ledum buxifolium* or *thymifolia*, is another very low evergreen plant, with an upright style of growth, well suited for green beds; this requires, and must have peat to grow in, and it is the only evergreen-bed in which I think a border or edging of another kind could be properly introduced, and that might be of *Polygala buxifolia*, a very common old plant. Most of the hardy Heaths would answer in different-sized beds, but in this style no more than one kind is admissible in one bed. The little spring-flowering Heath, called *herbacea*, would match a bed of the trailing *Daphne*, while the bushy, upright Heath, called *stricta*, would come in to pair with such plants as some of the *Pernetias*. All these, and many others, I have seen in practice, and I can vouch for their good effect; and from plans that are sent to me the style seems to be gaining favour generally. The plan which is engraved for this month shows a very good way of using permanent evergreen-beds.

In the new American-garden at Kew, on the south front of the large conservatory, most of the beds are planted with one kind of plant, and the effect is a wonderful improvement on the old style of mixing all sorts together, like the old herbaceous borders. There you see a large bed filled with hybrid *Rhododendrons*, all of one strain; another large bed with nothing but *Rhododendron hirsutum*; another of *Andromeda floribunda*; one *Pernetia mucronata*, or *Gaultheria shallon*, or *Gaultheria procumbens*, *Kalmia glauca*, *Andromeda polyfolia*, *Andromeda axillaris*, and *Andromeda acuminata*, these last two they call *Leucothæ*, in deference, as I suppose, to Decandolle and his *Prodomens*, which seems a first authority at Kew; but a good plant cannot be spoiled by a false name, whatever the authority may be; and certainly the masses, great and small, of these beautiful evergreens, planted in these beautiful grounds, must give a good turn to public taste, in the way of arranging beds, even in the smallest gardens.

The catalogues of the Bagshot, and other growers of American plants, furnish a host of names of plants suitable for mixing in a good flower-garden, in lieu of neutral beds, or in addition to them, and the rose-growers have now thousands upon thousands of little plants in small pots, ready to be planted-out about the second week in May, of a great number of good bedding *Roses*, and *Roses* that do better in beds for the first two years than in any other way. *Paul Joseph* was one of the best bedding *Roses* I saw at Kew last year; and it was there only that I saw the old *White China*, which I have so often recommended for beds: it has no other name. *Bourbon Queen*, budded on the *Manetti* stock quite close to the ground, was another rose-bed of great beauty which I saw last autumn; but most of the dwarf and medium-sized *Bourbons* budded so low, and planted young, make the best of beds on soils that will not grow *Roses* in general; and all they want is a good dressing of rotten dung, and to be planted thicker than is usual for *rosaries*. We shall be at a sad loss for autumn-sown annuals to fill up and flower between the bedding-plants next May about London; we had hardly any snow to shelter them; and I never recollect such destruction among them before so late in the spring. Blue annuals are always the scarest. The blue *Nemophila* sown now, or any time in April, will not be in flower the beginning of July; and if the season is dry, as we all expect it will be after so much wet and hard weather, it will be over by the second week in August; but the *Lobelia racemosa*, the next best, if not the best blue flower we have, will go on to the middle or end of

September from sowing about the end of April, and it will transplant well, which is a great comfort at times, when we want the same colour in a bed that goes off early. Most of the hardy annuals that are sown from the middle to the end of April, begin to flower soon after Midsummer, or early in July, even if we have a cold May. The end of May is time enough to plant out *Saponaria calabrica* where it is to flower; but it should be in a forward state now, and be soon fit to plant out singly, in front of a wall or house, to be nursed all through May; it is the prettiest of all the little annuals that flower to the very end of the season, and is always scarce, from not ripening seeds very freely when the autumn is wet like the last. The *Eucaridium grandiflorum* ought to find a small bed in every garden, and be sown rather thick where it is to flower, and no ground can be too rich for it. The white and purple *Clarkias*, mixed, is another bed which no one should miss; it will be in its prime by the 20th of July, if sown within the next ten days, and will last to the end of August. A large sowing of *China Asters*, about the 20th of April, and again about the 10th of May, will provide good mixtures for second planting after-annuals, and no one can safely use the summer annuals without a good stock of *Asters* to follow them.

The old *Rose-scented Geranium*, mixed with *Scarlet Verbena*, is a bed that should not be forgotten; almost everyone approves of it. The old *Touchstone Geranium* bed, I mentioned last autumn as being so rich with the Rev. Mr. Lys, near Oxford, should also be kept in mind; it is fully as good as *Lady Mary Fox*, or any of the *Diadematus*; and now I should think my own seedling *Diadematum*, which is called *Regium*, could be had in sufficient quantity for beds. It grows far better with me here than on the Suffolk chalk. D. BEATON.

STRAWBERRY FORCING.

"I HAVE managed my Strawberry plants exactly as you have recommended; and yet, neither in my warm greenhouse, nor in my small heated pit, have I succeeded. What is the reason?—is it owing to the season? Few, it would appear, have shown themselves at Covent Garden; and there were none at the Rooms, in Regent-street, in March. Has the season been so peculiarly unpropitious?"

Such is the substance of a batch of queries that have reached me, chiefly from ardent young amateurs. In reply, I would say, that neither the Rooms, nor Covent Garden, are an accurate test of general success, inasmuch, as market suppliers do not, in general, prepare for market until they can depend upon a briskish sale; and gardeners in the country, with a table and dessert every day to provide for, unless where the means are extensive, cannot easily spare an extra good dish for exhibition purposes early in March. Last autumn, certainly, was not over-favourable for ripening the buds of Strawberries; and yet attention could do much; for this blaming a season, though a very convenient excuse, too often acts as a barrier to progress, making us rest satisfied when we should try and do better. Many gardeners have been very successful this season. I have, myself, gathered rather sparingly for the first week in March, and fine fruit very plentifully afterwards.

Perhaps the best way to enable some of our readers to perceive in what they have been deficient, will be to glance at some of the *minutiae* necessary to success; leaving them to study the papers of Mr. Errington and others for fuller details.

1. *Preparation of the Plants*.—Round London, runners of the previous summer are generally used. These are either encouraged to root on the beds, and are then potted, or they are at once fixed on a little mound of

firm soil in the centre of a pot, the string of the runner being cut after the plant has rooted freely in the pot; or, the runners are first laid in small 60's, and, when rooted, are cut off and potted singly into 48's or 32's. I like a number of 48's for early-forcing, just because I thus secure the earlier ripening of the buds in autumn. In potting, the chief thing is to keep the plant well-up in the centre of the pot, and to place the soil round it as firm as possible. If the nice, sweet, mellow soil is of medium quality as to dryness, you cannot squeeze it too firm. After potting, I set the plants in a shady place for a few days, and then, on a hard bottom, where they can receive the *greatest* possible amount of sunlight. Eight-tenths of the amateur's plants I saw last season were injured by the shade of walls or hedges. One, who was very proud of his cabbage-like Strawberry foliage, last autumn, seemed shocked when it was hinted that his ladies *would not eat leaves*; and he says now, that almost every flower has proved barren. When thus set fully in the sun the plants must never suffer for want of water; and manure-water is generally given. Towards the end of October they must be defended from continued rains by laying the pots down. During winter they should be plunged, and the tops, as much as possible, defended from frost and wet. Covering them with glass-sashes is the best mode of protecting them. Some time ago, I saw a nice lot of plants standing on the open ground, pots and plants alike unsheltered. After the vicissitudes of such a spring, I can safely prophecy, that the owner will not make a fortune had he a guinea per ounce for all that he will gather in April.

In cold places, much north of London, plants rising two years old are generally used. Runners are pricked out one summer and potted the next; or the plants fruiting this March and April are placed on the north side of a wall or hedge when taken from the house, get rough treatment there, in the way of resting them—in fact, no treatment or attention at all; and then, in the end of June or beginning of July, and frequently towards the middle of it, they have all the soil shaken from them, are fresh potted, shaded a little at first, and then fully exposed as mentioned above. These generally produce very plentifully, but, unless thinned very freely, the individual fruit is not generally so fine as from young plants. I manage *Kean's Seedling* the best for early use, very well from runners of the previous year; but I find that I must adopt the two year old system with *British Queens*, as I cannot get runners early enough. Those who are satisfied with a middle-sized fruit will find *Cuthill's Black Prince* an easy grown and very fertile variety.

2. *Treatment in the House*.—I say nothing now of forwarding in frames, farther than that the heat should never be so much as to give a cheek to the plants when moved into the house; 45° is a good medium to begin with; from that, to 60° of night temperature, will be high enough during the whole stages of their growth and ripening. For our early fruit, the average night temperature has been 55°, with a rise of from 10° to 15° from sunshine. A very high temperature, after the fruit is swelling, will hasten the ripening, but at the expense of flavour. We like 50° when the plants are in bloom, with a good rise from sunshine. Our early fruiting plants, in severe nights, often were at 45°, and even lower.

Position.—The plants must stand *near the glass*. The nearness will have to be regulated by the flatness or steepness of the roof, and the season of the year. Under a flat roof, with an angle of about 75°, I gathered fruit from a shelf early in March, but the bloom almost touched the glass, and the shelf was as near the apex as would permit of light playing all round the plants. In a house with an angle of 45°, or still more acute, if the

shelf was placed favourably for light all round, the plants would set well at twelve or fifteen inches from the glass. The best place I have for *setting* Strawberries is a shelf in a peach-house, at an angle of 45°, and when once the peach-house is started, most of the Strawberries are *set* there, and then removed elsewhere to swell. The house is 10½ feet inside measure. There is a shelf suspended by iron brackets to the roof near the top. Another shelf is on the top of the fruit trellis, where lately there was a row of ripening fruit in boxes, which had been moved down from the shelf near the top, after being set, and which was filled by those started a little in a frame. A third shelf is close to the fruit-wall, where the fruit will set after the end of March, because the sun then has gained more power. In February, and first part of March, every plant on the front shelf, as it shows bloom, is, if possible, moved to the shelf near the top of the roof. The setting of the fruit freely on the front shelf, after the sun gains power, explains why Strawberry plants will do very well in pits and frames at an angle as flat as 80°, after this season. Were I required to have Strawberries at the new year, I would bargain for a steep roof at an angle nearer 30° than 40°.

An amateur, to whom I had stated that his Strawberries would do no good on his greenhouseinery stage more than three feet from the glass, told me, some three weeks ago, that they were as near the glass as the trellis-shelf in my house, a row on which was then ripening finely, but he forgot that every one of these had been moved down from the shelf near the top.

I may say, in conclusion here, that this house furnishes no bad example of the cramming-and-yet-attending-to-every-thing system. With the Vine, Peaches on the fruit-trellis, and from top to bottom of the back wall, and these three shelves, the house seems full enough without the successions of under crops, which, in one shape or another, are pretty constantly present, with the exception of a few months in the summer. I shall shortly get rid of the plants from the trellis-shelf, to let in more light to the back wall; and, at farthest, before the middle of May, I like to remove the shelf near the roof-top for a similar purpose.

Amateurs must not be discouraged by a little labour. Something like a similar course is what the generality of our best gardeners *must* adopt.

Watering.—This is a matter of first importance. Plants exposed in winter, as detailed above, often have the fruit-bud destroyed. When looking at the plant nothing seems the matter. Just so from the want or the excess of water after the plants are moved into the house. In the first case, the latent fruit-bud will become mummy-dried; in the second, it will be as liable to go off by apoplexy as a certain alderman gorged with turtle. The medium path is the safest. The soil should be neither wet nor dry, until the flower-stem appears. A little nicety is, therefore, required in using the water-pail. If the plant is well raised above the centre of the pot there is less danger; but in forcing early, the water should always be poured on the soil without touching the centre of the plant. After the fruit is set and swelling fast less care is necessary. Before that time, if saucers are used, go round twenty minutes after watering and empty out every drop contained in the saucer. At any time, but especially before the fruit is swelling, the Strawberry will show its resentment at being treated as a marsh plant. On this account, unless on shelves hanging over a pathway, I have discarded flats or pans, and substituted, as better every way, long pieces of turf, laid on the shelf, with the grass side downwards, with a groove cut on the upper side for the pots to stand on. The turf ranges from one to one-and-a-half-inch thick. With the pot well drained, it is no easy matter to make a *morass* of it by this means. The turf serves alike for nourishment, and as a retaining

and parting-with-moisture medium. On a shelf very near the glass, under a flat roof, I improved, I think, even upon this, by stuffing between the 48-sized pots on the south side with moss. This minimised waterings, as the pots were not unequally heated on one side by the sun's rays, and the fruit hanging over this moss, and among the sprigs of grass that came from the turf, presented a rather pleasing union of the natural and artificial. I would advise new beginners to try this plan in preference to saucers. A saucerful of water, in a dull day, has ruined many a promising Strawberry plant. After the flower-trusses show themselves, I use manure-water rather liberally. To sum up, then, keep the plants rather dry until they show their flower-trusses; after that they must never suffer from dryness, but no water should stand about the roots until they are swelling freely; and if fine flavour is wanted, no water should ever stagnate about them. For securing all this, the turf is not more simple and economical than it is useful and effectual.

Time of placing the Plants in the House.—I say nothing of early forcing. In a common cool greenhouse it would be little use housing the plants before the middle of March. In a warm greenhouse, or greenhouse vinery, they may be introduced by the beginning of March, or even in February. Many young gardeners, professional and otherwise, err greatly in the matter of *heat*, especially that which is artificially supplied. After the short day is passed, and these *minutiae* are attended to, Strawberries will do well, where the average night temperature ranges from 45° to 52°, with from 5° to 10° rise at midday, even when dull, and from 10° to 20° rise in sunshine, with a safe portion of air. Those who even now still contemplate introducing a few scores of plants, will find all the risks diminished, but even now all these *minutiae* are worth attention for present practice and future guidance. Intended chiefly for the use of those who in their one house wish to combine the useful with the beautiful—such as in a greenhouse vinery—these hints are confidently submitted, as being tested by extended experience.

STRAWBERRIES IN THE OPEN AIR.

Many complaints reach us, chiefly as respects *Queens*. I can only sympathise. Though the plants here were partially protected with branches, I do not believe that one healthy plant has remained after the vicissitudes of the season; almost every one is quite dead. For flavour, beauty, and size, the *Queen* is still our favourite; but we fear its *tenderness* will militate against its out-door culture in many places, unless regular protection be given to it.

I may remark, that to obtain a fine crop of this kind in-doors, the beginning or middle of March will be time enough to house it; so that our greenhouse vinery friends may try it, as well as those with the greatest means. Mr. Judd, of Althorpe Gardens, who took the prize at Chiswick, last May, and previously at Northampton, exhibited the best early basket I have yet seen. Some parts of his practice were glanced at some time ago, in a cursory manner; but a detail of the *minutiae* of his *Queen* forcing would be acceptable to many readers, as well as gratifying to an old fellow-member of the West London Gardeners' Association for Mutual Improvement.

R. FISH.

PRESERVATIVE WALLS.

(Continued from page 504.)

LIST OF SUITABLE PLANTS.

SWAINSONIA GALEGIFOLIA and its variety, with white flowers. These are two slender-growing shrubs, with purple and white flowers, continuing a long time in

flower. Both are well suited to plant against a wall, protected with glass. The foliage is elegant, and the flowers beautiful.

SWAINSONIA GREYANA (Captain Grey's Swainsonia).—A distinct species, with clear pink flowers.

SWAINSONIA LESSERTIAEFOLIA (Lessertia-leaved Swainsonia).—A beautiful species, with deep purple flowers, lately introduced by Messrs. Osborne, of Fulham.

All the *Swainsonias* are from New Holland, and are suitable for the Preservatory. I have seen them made use of for bedding purposes with good effect.

TASMANNIA AROMATICA (The Sweet Tasmannia).—A beautiful evergreen shrub, with the stalk of the leaf of a beautiful purple. The flowers are white, and the fruit is used as a stimulating condiment in Australia. Planted against a sheltered wall, this shrub will be very ornamental, both for foliage, flowers, and fruit. It is nearly hardy.

THEA (The Tea Tree).—The Tea tree flowers in winter, and on that account should be planted against a glass-covered wall. Though the flowers are white, and not so showy as the Camellia, yet they are very pretty and valuable at that season of the year. A plant or two of each species, and their varieties, are desirable to plant against a wall, both for their fine foliage and pleasing flowers, as well as a matter of curiosity, to show to the visitors the plants from whence the leaves are taken to make that pleasant refreshing beverage emphatically called *Tea*. The species lately introduced, and named *T. Assamensis* (Assam) is a much more robust tree, with remarkable large fine foliage. I have seen several large plants of it, but I never saw a bloom. From the size of the leaves I should think the flowers will be large also. The common Tea tree lives in the south in the open air, sheltered with a mat only in severe weather. In Mr. Page's nursery, at Southampton, there was once a hedge of it which had never been protected. I saw the remains of it three years ago; it is now, I believe, rooted up entirely.

With this interesting tree I conclude my selected list of suitable plants for a Preservative Wall. The number of these plants may appear considerable, and, perhaps, the whole collection will never be seen in one place; but it will be an easy matter to choose out of the whole a very select number for any situation. I think the intelligent reader will have perceived that I have dwelt upon more largely such as are the most suitable for such a purpose, and may make his selection accordingly. If the Preservatory is one of the highest order—that is, with the wall heated with hot-water, and covered with glass—the most of the flowering shrubs from New Holland would thrive and flower in it much finer than in pots. As Mr. Fish justly observes, the glass might project a sufficient distance from the wall to allow one or more rows of low-growing shrubs to be planted out in the border in front of the walk to be looked down upon; thus the spectator would have the wall, on the one hand, covered with fine evergreen flowering shrubs; and, on the other hand, would have a row of dwarf beautiful shrubs to look down upon. To effect this properly, the front row of shrubs should either be such as grow naturally dwarf, or should be heavily pruned to keep them so low as not to shade the shrubs against the wall. The soil for these low shrubs should be rather poor than otherwise, in order to keep under the growth. Keeping them in their pots would, in a great measure, effect this; and if there was a reserve garden they might be removed (if in pots) when out of bloom, and others that have to flower might be plunged in their place. This front border might also be made use of to force earlier into bloom such plants as the *Ghent Azaleas*, *Perpetual Roses*, *Andromedas*, and a host of such-like plants. By such a judicious method the place might be kept gay with flowers throughout the whole of

winter and spring—a time of the year when such a building and such flowers are the most acceptable in our variable climate. Many bulbs, such as Mr. Beaton has described lately, would thrive well in this border, and would render the house as gay as a flower-garden in August. Whether this front border is adopted, or carried out, or not, the narrow border between the walk and the wall might have a number of these bulbs planted in it. They would grow and flower finely, thus rendering the place gay and brilliant with flowers when the shrubs against the wall are only ornamental as evergreens. The *Vallota purpurea*, for one, would make a splendid show, as would also the greenhouse species of *Nerine*.

There is in some of the London nurseries a new Preservatory plant, named *Rhodoleia Campionii*, a splendid foliaged and beautifully flowered shrub, that I judge will be, when the price is moderated, a proper and suitable plant for the Preservatory. The flowers are rosy-pink, as large as a half-a-crown. It is, as yet, very dear.

T. APPLEBY.

THE PELARGONIUM.

(Continued from page 503.)

A SELECT DESCRIPTIVE LIST OF CHOICE VARIETIES FOR 1853.

Attraction (Turner), bottom petals mottled crimson; upper petals dark, edged with carmine.

Afghan (Gaines), rosy lilac; dark spot on the top petal.

Ambassador (Beck), lower petals shining lilac; upper petals dark blotch, edged with scarlet; a large trusser.

Arethusa (Beck), lower petals delicate salmon rose; upper petals with a crimson blotch, edged with rose.

Ariadne (Foster), lower petals rosy purple; top petals dark, clearly edged with rose; large truss and fine substance; an early bloomer.

Astrea (Hoyle), white centre, deep pink, lower petals mottled with orange; upper petals rich maroon, edged with orange, very distinctly.

Basilisk, a very rich coloured variety, blooms early; fine.

Butterfly, very profuse bloomer, and constant; mottled rose and lilac lower petals; orange red upper petals, with a margin of lilac, very striking and novel, but the petals are rather narrow.

Beatrice (Hoyle), bottom petals mottled rose; top petals nearly black, with a margin of dark carmine.

Celia (Hoyle), novel bright orange; large, and very attractive.

Cordelia (Hoyle), good form, and new in style; lower petals pale pink; upper petals rich maroon, edged with deep rose; a late bloomer.

Chloe (Hoyle), rose, white centre; medium sized; dark blotch on the upper petals; form good.

Conspicuum (Foster), lower petals light salmon pink, with small dark blotches on each; black velvety upper petals; light centre; a fine, showy, well-shaped variety.

Constance (Foster), under petals pale pink; dark upper petals, with pink margins; white centre; a good variety.

Chieftain (Hoyle), rosy crimson, with dark shaded blotch; fine.

Commissioner (Beck), upper petals dark chocolate, margined with rose; lower petals purple, with dark veins; good habit, and excellent form.

Cuyp, very dark flower, with white centre; good.

Cristine (Hoyle), rose petals, with dark blotch, shaded with orange; a fine variety.

Delicatissimum (Beck), rosy lilac, white centre, and fine form.

Elise (Hoyle), orange pink, shaded with lilac; light centre; fine.

Enchantress (Foster), lower petals rosy crimson; dark crimson blotch on the upper petals, with a carmine margin; very fine form.

Eurydice (Foster), crimson lower petals; top petals dark maroon, with a narrow margin of crimson; a free bloomer.

Eleanor (Foster), compact neat flower; deep rose lower petals; maroon upper petals, with a narrow margin of rose; white centre; very fine.

Exhibitor (Beck), upper petals dark crimson maroon, margined with deep rose; lower petals clear rose; white centre; stout habit, and a free bloomer.

Field Marshal (Symons), rose lower petals; upper petals dark blotched, with a clear scarlet margin; fine.

Fire Ball (Henderson), crimson scarlet; excellent.

Flavia (Hoyle), bright orange scarlet; fine.

Flying Dutchman (Turner), crimson bottom petals; upper petals dark maroon; very large trusses.

Galatea (Hoyle), large white centre; lower petals shaded lilac; upper petals dark blotch, shaded on the margin with rosy lilac; early; free and constant.

Ganymede (Hoyle), dark upper petals; white centre; lower petals warm lilac; a fine variety.

Gipsy Bride, dark red salmon; extra fine.

Gem (Beck), crimson-scarlet; fine.

Herald (Hoyle), mottled, light pink bottom petals; top petals dark, blotched, with narrow margin; white centre.

**Heroine* (Foster), rose; lower petals black, blotched on upper petals, margined with rose; white centre.

Illuminator (Turner), mottled crimson; lower petals dark crimson; upper petals showy and attractive.

Incomparable (Beck), fine form and large size; deep orange scarlet; very fine.

**Kulla* (Hoyle), a dark flower, with every petal blotched; fine and distinct.

**Lagoma* (Hoyle), fine form; free bloomer, and constant; lower petals rich rose; upper petals nearly black, with a margin of deep rose.

Lalla Rookh (Foster), blush and dark crimson; white centre; fine.

Leader (Beck), a crimson purple flower, with dark blotch.

**Leonora* (Hoyle), fine round flower; white centre; upper petals rich maroon, with orange blotch, and even margin of pale pink; lower petals vivid pink.

Lavinia (Foster), crimson purple; lower petals rich maroon; upper petals good habit.

Lablaeche (Foster), orange rose, dark blotch, large flowers, with a white centre.

Lord Mayor (Black), bright crimson lower petals, with a black blotch on the upper petals.

Magnet (Hoyle), scarlet crimson; one of the most showy varieties yet raised; profuse bloomer, and constant. Every grower ought to have this.

May Queen, light rose, very fine and constant.

Magnificent (Fouquet), orange rose; a large flower of fine form.

Major Domo (Beck), a large rose-coloured flower, and free bloomer.

**Medora*, rich pink lower petals; orange top petals, margined with pink; free bloomer, and compact.

Monteith (Foster), lower petals crimson purple, with a dark blotch on the upper; very fine.

Mohanna (Hoyle), lower petals rich rose; upper petals with a large dark blotch, shaded and mottled; large, free, and bold.

Naudée, a rich dark flower of fine form.

**National* (Foster), a rich dark flower; crimson bottom petals; black blotch on the upper, margined with fiery crimson; fine substance.

Nonsuch (Hoyle), rose; lower petals marked distinctly with a spot and feather; curious and striking.

**Novelty* (Turner), rosy crimson; lower petals strongly marked and veined with crimson; upper petals maroon, with crimson margins; showy, and a free bloomer.

Nectar Cup (Hoyle), orange rose; clear white eye; good substance, and fine habit.

Ocellatum (Hoyle), a great improvement on *Nonsuch*; very fine and desirable.

Outline (Foster), a fine spotted variety; very distinct.

**Optimum* (Foster), lower petals bright crimson; the upper petals have a large glossy black spot, with a well-defined margin of crimson scarlet; free bloomer, large trusses, and excellent form; one of the best.

**Oscar* (Foster), rich scarlet crimson; free and constant, and of good quality.

Painter Improved, a crimson flower, with a blotch of rose on each petal; very striking.

Plantagenet (Turner), lower petals crimson; upper petals dark maroon, margined with crimson.

Purple Standard (Foster), lower petals rich purple; upper petals black, with scarlet margin; fine substance, good form, and smooth at the edges.

**Portia* (Hoyle), large and showy; a light flower; lower petals white, tinted with pale rose; large carmine blotch on the upper, margined with white.

**Queen of May* (Foster), bright novel orange scarlet, dark blotch in the upper petals, with scarlet margin.

**Rachael* (Foster), free and constant; a good grower, with maroon upper petals, and margined with rosy crimson. A good exhibition variety.

**Ringleader* (Turner), scarlet crimson lower petals; maroon upper petals, with scarlet margin; very attractive.

Rembrandt (Bragg), a large good shaped flower, dark maroon and rose.

Rubens (Foster), crimson, with dark maroon blotch on the upper petals, margined with rosy crimson.

Shylock (Foster), the darkest variety; lower petals dark purple; upper petals black, with a maroon margin of scarlet; free bloomer.

Tyrian Queen, a purple flower, and very distinct.

Zaria, a pretty novel cup-shaped flower; clear centre; warm pink ground colour; lower petals deeply marked with a constant spot of maroon and orange; small black and orange blotch on the upper petals. The most striking and novel variety ever raised.

A select list of fancy varieties will be given next week.

T. APPLEBY.

THE KIDNEY BEAN AND ITS CULTURE.

ALTHOUGH of tropical origin, there are few of our ordinary vegetables that can boast a higher antiquity amongst us than this one—certainly, some whose pedigree, if traced backwards, would lead to the supposition that they must have been in general use before this far-fetched foreigner, will be found, on enquiry, to have been little better than weeds at a time when this vegetable was nearly as much understood as it is now; and though, doubtless, the varieties we have in cultivation may, in certain points, exceed those which were in existence a century ago, yet we much question if the constitutional character of the plant has undergone much change the two centuries-and-a-half that it is said to have been amongst us, but its cultivation has, doubtless, been much on the increase during that time, and perhaps it has never known a greater advance at any period of its history than it has during the last twenty years, as during that time it has found its way more extensively into the gardens of the labouring poor, while its culture for the markets of large cities has been on a corresponding scale of magnitude. With these facts before us, it requires no further comment to extol its uses. That mighty judge, which in the main is generally right, “the British public,” has stamped it with its approbation

as an article of necessity; and its general appearance in the market in abundance forms a sort of epoch, which is hailed with a feeling little short of that which welcomes in new Potatoes, or the first Peas of the season; while, in many respects, it is better adapted for forcing than either of these useful articles, which enables it to be had during a much longer period than the one of them; but as we are now speaking of the services it renders where grown in a natural way, we must first take a survey, and consider its features, and other characteristics, as a plant of foreign growth, which, though an acquaintance of long-standing, is probably as tender as on its first introduction.

Without entering into the botanical question as to whether the dwarf and twining kinds be really distinct species or only varieties, rendered somewhat permanent by a long course of culture, we proceed to say, that in many points the two kinds resemble each other, showing, perhaps, a common origin; while, for practical purposes, they are divided into two sections—one, a twiner or creeper, which attaches itself in a spiral direction to whatever object it be near, preferring, however, the smallest twigs instead of the large stems of trees, &c.; the other is more dwarf in its growth; yet many varieties amongst them send up an occasional running shoot, evincing a disposition to ramble to a greater altitude; some, however, have little inclination to “run,” and quietly contenting themselves with a position of about two feet removed from *terra firma*, furnish an astonishing supply of pods in the early autumn months, their fruitfulness, no doubt, being enhanced by the effort which nature makes to enable them to ripen seed for the perpetuation of their species. Now, it is easy to see, that taking advantage of this disposition, we direct the plant to minister to our wants by our gathering all the half-formed fruits, thus compelling the plant to produce more, which, in turn, suffer the same fate as the first; and so on, until the plant, unable to support such an exhausting system, either dies a victim to its endeavours that way, or is cut off by the elements, no longer being congenial to its welfare; consequently, the plant either languishes and dies, or it is killed off outright by the cold weather setting in; but usually its services, before either of these diseases overtake it, is such as entitles it to our gratitude, and few plots of ground in the garden produce a greater amount of usable food, in proportion to its extent, than does that portion which is planted with either of the two kinds of Beans, which, in common phrase, go by the name of *Runners*, (or *Scarlet Runners*), and *French Beans* (or the dwarf sort); the former of them, requiring stakes or some similar support not less than seven or eight feet high, is, perhaps, of the two, the most prolific, and, to the cottage gardener, a little more hardy than the *French Bean*.

With regard to the culture: both of these beans still have a strong impress of their tropical origin; coming, as they do, from the hot and sultry plains of India, it is not to be wondered at their not bearing our cold springs and autumns; neither do very cold or bleak winds suit them at any time, for a high northern latitude is fatal to them; or, if they do grow, it cannot be that they will be as productive as under more favourable circumstances. Therefore, all those who attempt its culture under such an adverse state of things should endeavour to mitigate them as much as possible, and try and give the plants the best position, as regards warmth, shelter, &c., which the place affords. With these advantages, *French Beans* may be grown in most parts of the United Kingdom; of course, in late situations, their period of servitude is much shortened by their being later in coming into use, and also ceasing much sooner in consequence of the earlier autumn. So sensitive is this plant of cold, that we have been creditably informed

of its being killed by frost in July; and, certainly, we have seen it much injured by a sudden fall of the thermometer in the early part of August, in the south of England; but, as we have observed, with the advantages of a warm border, and other things favourable, *French Beans*, and also *Scarlet Runners*, may be grown in tolerable abundance in most places.

True to their tropical character, they do not like being planted in a cold, ungenial soil; it is better, therefore, not to plant them too early, unless means of shelter be provided. In a usual way, the middle of April produces a crop as soon as if sown earlier. To our young friends we, therefore, advise a sowing to be made immediately on some sunny, warm border; or if it be even a single line immediately under a wall, so much the better. The dwarf varieties (*French Beans*) may be sown in rows about thirty inches apart, and the seed, if good, about three inches apart in the drill, which need not be deep, as it is better to raise the earth slightly over them, than bury them deep in a cold soil. After sowing, when the sun has warmed the earth very considerably, a deeper covering may be necessary.

Like every thing else in gardening, there is no lack of varieties; yet there are, perhaps, fewer higher sounding names amongst these than in Peas. We do not know of any *Goliaths*, *Champions*, and similar bombastic titles; but the simple term of *Dun-coloured*, *Speckled*, *Liver-coloured*, &c., are certainly more expressive of the plant's peculiarities than the *Rival*, *Invincible*, *Incomparable*, *Surprise*, &c., and of other aspirants to vegetable distinction, so that we do not find any fault with the meagreness of names in that way; on the contrary, I wish that such names as *Canterbury White*, and *Black Speckled French Beans*, were more common amongst other vegetables, and the puffing amount of new varieties ushered into the world with less parade. I fully concur in the opinion of those who think that much harm is done to the cause of "Flora" by the fantastic (if not vulgar) terms that are made use of to describe varieties; however, as this is a subject apart from the one I set out upon, I will observe, that the varieties named are all tolerably good, and any one of them may be now sown as described.

A row or two of *Scarlet Runners* may also be put in; these, however, ought to be six feet or more apart, and if they be planted now, then, in about a week, put in a quantity of seeds into a pan, or box, which place in heat, and after they are up harden them off, in order to fill up any gaps that the first crop of these are subject to; in fact, it not unfrequently happens that the first sowing perishes altogether, so that it is advisable to sow a second crop about a week or ten days after the first one, and those reared under glass may be planted out at the same time, when all danger from frost is over—say the first week in May. It is almost needless to say that a piece of very rich ground suits them best; but for the first crop it had better be dry than moist; for after-crops, or such as have to struggle against a Midsummer sun, in vegetating, a moister soil will be beneficial. If there be a danger of cold nights injuring the fruit crop, which it is sure to do if it happens, they will require some covering in some shape; it is astonishing what benefit a very homely covering makes, so that the amateur must not be backward in applying any substance that comes in his way. A few evergreen boughs are not bad protectors; while, to those who do not scruple at expense, a sort of a portable ridge, formed of very light timbers, and covered with oiled calico, is, perhaps, the neatest of all protectors, and may be used for Potatoes and other crops in rows, as well as for this; but when so many other things crave the attention of the cultivator, a homely substitute is often made to serve the same purpose; at all events, we advise them to be carefully looked to until the middle of May, in the south of Eng-

land, and to the end of it in the north. After which, there is reason to hope that the cold nights are over for the season; although, now and then, we are visited with an occasional "remembrancer" later than the above periods; these are exceptions to the general rule; yet it behoves the cultivator to be at all times prepared for them.

J. ROBSON.

THE BEARDS OF POLANDS.

As the subject of the Rev. Mr. Browne's contribution to your journal is really, why *Polands* are called *Polands*, I am quite puzzled to conceive for what courteous purpose he drags forward my name. I have never written one word on the subject he has espoused, and care not a fiddlestick's end why *Polands* are called *Polands*, or why *Chittiprats*, *Chittiprats*, &c.; they are so called, and I adopt the common accepted term; but, if others choose to erect temples of ignorance, I really must protest against my being thus hauled in as a votary.

I can, happily, well afford to exercise forbearance on anything that he can say, and shall so forbear, although I am denounced as having "ten times less experience, and fifty times less knowledge," than even his friend, the Rev. Mr. Dixon, whose errors I have refuted, and to rescue whom the Rev. Mr. Browne has rushed into print. I can *not*, however, restrain a charitable smile, though, like Gulliver, pricked with Lilliputian arrows.

The Rev. Mr. Browne is wise in his generation; hence he cautiously avoids the real subject matter of my letter, and has not even attempted to reply (answer he could not) to the host of arguments and proof, examples and experiments, which I have set forth, in establishing the fact, that the bearded are the true and genuine, and that the beardless are spurious, or hybrid fowls. Not only is this proved satisfactorily to my own mind, but, what is much more gratifying, to the minds of your readers also, as I learn from the number of letters recently received from so many of them.

Truth, and not contention, is my aim, and I shall ever be ready to read with attention the remarks of others, if expressed with a due regard to courtesy. Let my arguments, and the facts upon which they are founded, be taken severally, as they arise, and let what is written *be written on the subject in question*. I confess, I could wish the writer to be a gentleman who knows something of his own on the subject, that bespatterings from books may, in future, be avoided—one who has not only kept *Polands* in all their varieties, but who is a fancier of them, and who has been careful to observe, and to compare, and to reflect upon what he has observed. With such men, conclusions, and amicable ones too, are easily arrived at. But with those who persist in parading their own taste and dislike against arguments and facts, and especially when such taste is so outrageous as to recommend that even the top-knots of *Polands* "should be clipped round," I confess I have no sympathy; and I should be considered puerile by the readers of this Journal, were I now seriously to notice the opinions of such. The Rev. Mr. Brown's sweeping condemnation, also, of the whole race of *Polands*, I beg to intercede may be received by the lovers of these beautiful fowls with forbearance.

I refrain from observation or reply both to the matter and spirit of what your correspondent has advanced on his own subject of names.

J. R. HORNER.

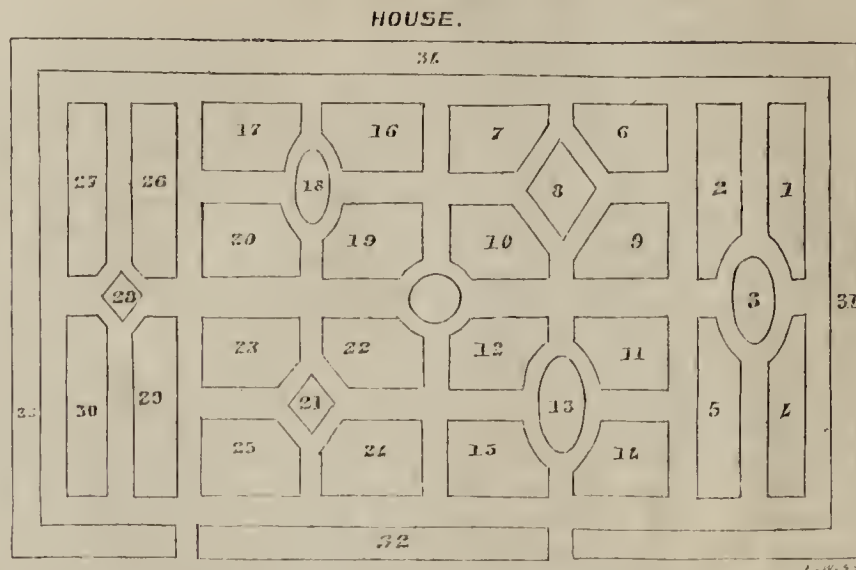
P.S.—I beg for the insertion of some remarks contained in a letter lately received from the Rev. Mr. Everard; not only will the weight of his authority be duly appreciated, but the idea embodied in the last sentence will be interesting. He writes—"As a brother fancier and breeder of spangled *Polands* for the last twenty-five years, I beg to write you, by way of remark, on a sensible paper of yours in *THE COTTAGE GARDENER*, respecting the *propriety of beards* in that beautiful breed of fowls. There can be no question as to the indispensable character of that appendage to the throat of the Spangled Poland; I consider it, in fact, as one of the essential characteristics of that variety; and should hardly consider a well-turbaned, full-robed Turk, but beardless withal, a more damaged object (if such an object ever

existed) than a beardless Spangled Poland Cock or Hen. There is one point you do not mention, but which I look upon as very necessary, if not indispensable, to perfection in the head of a Spangled Poland, "a *small*, well-formed *crescent*, right in front of the top-knot, resem-

bling exactly the crescent on the front of the Turkish turban, &c. &c."

[Here this controversy between the Rev. Mr. Brown and Dr. Horner will close, and we thank the latter for his courtesy.—E.D. C. G.]

GARDEN PLAN.—No. 5.



- | | | | |
|-----------------------------|------------------------------|-----------------------------|------------------------------|
| 1 Geranium Lucea Rosca | 9 Verbena mylindres | 19 Scarlet Geranium | 28 Tropæolum Canariense |
| 2 Lobelia ramosa | 10 Verbena Eliza | 20 Verbena St. Margaret | 29 Verbena — Robinson's |
| 3 Tropæolum Canariense | 11 Eschscholzia | 21 Salvia fulgens | Defiance |
| 4 Verbena Beauty supreme | 12 Phlox Drummondii | 22 Verbena White Perfection | 30 Ivy-leaved Geranium—White |
| 5 Cuphea elegans | 13 Dahlia Zelinda | 23 Heliotrope | 31 Fuchsia Thompsonii |
| 6 Dog-leaved Geranium, pink | 14 Scarlet Geranium | 24 Anemone japonica | 32 China Roses |
| 7 Gazania elegans | 15 Nemophila insignis | 25 Calceolaria—yellow | 33 Lobelia fulgens |
| 8 Salvia patens | 16 Verbena Clotilda | 26 Variegated Geranium | 34 Mixed plants |
| | 17 Calceolaria amplexicaulis | 27 Lobelia gracilis | |
| | 18 Convolvulus major | | |

THIS is a very good geometric plan of a flower-garden, with the list of the plants that were in it last season, and the owner (W. S.) wishes to know "How he might improve the planting for another year."

The first thing to look at in a plan of this kind is to see how the artist intended to group his plants. Here the grouping is in double groups, and each group in double pairs. The four beds round bed 8 make the first group; and the four round 13 a corresponding group. Each of these groups have corresponding ones in the other half of the garden, and it is a matter of taste whether, in planting, the colours in the group, No. 8, are repeated in the corresponding one round 18, or in cross corners round 21. As the windows look across the garden from the longest side, whatever colours are put in the first group round 8 must not be repeated round 13. If the whole garden is on a level, across from the house's side, all the plants in the beds might be just of one height, supposing that could be, without prejudice to the style of planting terrace-gardens, or geometric-gardens on a dead level. But if the garden falls either to, or from the house, the lowest side, or the lowest end, ought to be planted with taller plants—still keeping to the corresponding colours. As, however, it is not possible, or desirable, to have all the plants of one height for these uniform-sized beds, the tallest kinds ought to be planted on the side farthest from the house, unless the situation of the garden is several feet below the level of the front door, or drawing-room windows. When a garden is seen from a height, or by a bird's-eye view, as they call it, the relative heights of the plants are of very little moment, as compared to the proper distribution of the colours and shades. All these are points, or principles which are equally applicable to every geometric flower-garden in which the principal beds are balanced as they are in this garden.

What I mean by being balanced is this:—If we look across the centre of the garden from the front-door, we have two rows of principal beds on each side, and of equal size throughout, and if the garden were turned, so that the centre of one end pointed to the front-door, the whole are

equally balanced on each side of the centre walk in the same way. On the whole, therefore, I consider this a very good design to learn the fundamental rules for designing geometric, or terrace-gardens from, and also to learn how to plant them according to the present style of arranging them. I hold it to be far more desirable to be able to understand the *rules* or *principles* by which a given design of a flower-garden ought to be planted, than the kinds of plants to be used for doing so, and for this reason: If principles are true they never alter, and if not true they are not principles, although we might call them so; but the plants are governed by fashion, and fashion is a weatherecock; therefore, a gardener, or a critic, might just as well be a weatherecock too, as to think of convincing ladies that such and such plants were the best for their gardens, or that such and such dresses were the best for them to wear.

Gentlemen are never so hard to turn on either of the two points, but still, one would be as likely as not to burn his fingers with them, as with the ladies, on the choice of flower-garden plants, and that is exactly the reason why I try to avoid the subject as much as possible. I am never at a loss in judging for myself on such matters, but laying myself "out" like a flower-bed to be *judged*, requires even more nerve than I can venture.

I do not alter any of the figures on these beds, because I suppose the garden is entered at one end in front of 3; but the planting is not, or ought not to be done with reference to this entrance, but as it looks best from the front-door or windows. I may remark, however, that beds 3, 8, 13, 18, 21, and 28, ought to be very neutral, if all the rest were very gay; or better still, planted with permanent green low plants that have few or no flowers, or flowers of no striking colour, or long duration.—D. BEATON.

TEA SEEDS.

RESPECTING the Tea seeds mentioned at page 459, it seems that our readers have come in for a share, and we are asked how to manage the seeds, and the young Tea

plants when they come; and as luck would have it, this is the very last lesson in gardening that I learned myself, and that, too, this last season, from Mr. Fortune himself, the best authority in Europe for raising Tea plants. I would not place my own judgment under any authority of less standing. When he was last in China, it was for the very purpose of gathering Tea seeds for the East India Company. He collected thousands of them. Sowed them with his own hands before he left China, in boxes closed with glass, on the Wardian principle, got them round to Calcutta on the deck of a vessel, and hence to Sutledge, in the north-west of India, without losing a single plant, then after putting the people there in the right way to rear them, he returned to England, and before he left here, for the third time, we heard that the Tea plantations, from these very plants, were so promising, as to induce the Company to engage him to go out again to gather, sow, or plant, and get round as many seeds and plants as he and all his friends in China could procure, until so many thousand acres of the real China Tea plant are established on British principles of trade in the country of the "Seven Rivers."

Now, although we can never expect to do much good by growing Tea plants in this country, the eager desire to possess a plant of such celebrity is very excusable. Nurserymen have lots of them on sale, but that is as nothing compared to the interest of raising the plant from seeds planted by one's own hand at home, and that from a sample so well authenticated as that sent over by Dr. Bowring, and so obligingly presented to the Horticultural Society, by H. Winch, Esq., for distribution among the Fellows. I took a few of these seeds, and I shall follow up the liberal spirit evinced in the whole transaction, by offering *one* seed to anyone who sends me a stamped and addressed adhesive envelope, as far as they will go; on the principle of first come, first served; and also subjoin, here, an epitome of the right way to manage them, as I learned from Mr. Fortune's own experience. When Mr. Fortune started from China, with his boxes sown with the Tea seed, the vessel might be said to get into a hotter and hotter climate, until she turned into the Bay of Bengal, and entered the Hoogley. With his close boxes, and the effect of the sun in these parts, the seeds must have had something like a cucumber-heat culture, after the first week; and as that seemed to agree with them so well, as is proved by the result, we may rest satisfied, that a real cucumber-frame in England, free from the bustle of sailors, seamen, or Hindoo coolies, will suit them much better, and be less liable to knock-them-down accidents. Then, as to soil. Mr. Fortune found that good black garden mould suited them best; so that the top-spit of an old onion-bed, or any part of a clear kitchen-garden, is good enough to sow Tea seeds in, all the world over. As to watering—things that are put in these close boxes hardly ever require any; so that we must here fall back on our own pitchers, and trust to what we would do with the seeds of a very choice Camellia after sowing. The Tea seeds are nearly as large as the largest garden peas, and as brown as a berry, and, therefore, a good watering cannot hurt them much at first, nor wash them out of the pot. So a good watering they certainly may have, and the front, or south end of a hotbed is the best place for them, where, what with the first watering, and the dampness of the place, very little more water will be needed, except a slight sprinkling on the top, if it should appear dry. The seeds are to be placed just half-an-inch deep, and three weeks, or at most, a month, of the hotbed culture will bring up the actual Tea plant before our eyes. If the bottom-heat is not very hot indeed, I would plunge the pot down to the rim at first, and the moment I saw the first move of life, I would take up the pot, and then place a bit of board under it, as very likely the tender roots would not relish being too hot at first. When the plants are three inches high, I would give them water every time the soil got dry, and keep them in the hotbed till the end of May, and after that in a warm room, or close cold-frame, for a month or so, after that they are safe enough where the Myrtle would do. The seed may also be reared in a living room, from first to last, the only difference is, that the plants will be longer in coming round.—D. BEATON, *Surbiton, Surrey.*

POULTRY SHOWS.

NEWCASTLE, NORTHUMBERLAND, AND DURHAM SOCIETY.—This exhibition took place in the spacious covered building, used as a corn-market, at Newcastle-upon-Tyne, on Wednesday the 30th of March last.

In our account of the last year's meeting of the society, we took occasion to express a hope that they might, with a little exertion, produce a show of poultry second to those of few local associations; but we must confess that we did not expect such a result to be so very soon accomplished. For a beginning, the exhibition of 1852 was a very creditable one, but it admitted of considerable improvement, and the society, aided by a judicious committee, and two most indefatigable secretaries (Mr. J. S. Challoner, of Newcastle, and Mr. Trotter, of Healey Mill), have certainly lost no time in effecting very much of what was desired. As a whole, the show of which we are about to give a short account, was, in every point of view, very superior to its predecessor, and we have only to say to this, as to many kindred societies, "go on and prosper."

The first class—"Cochin-China, cock and two hens," comprised some very nice birds, as did the other classes in which this variety was shown, but we saw nothing of transcendent merit, and although better than those of 1852 (with one exception), there is still room for improvement, which we have no doubt will soon be made.

The *Spanish* classes (6, 7, and 8) were, we thought, the best in the exhibition. The first prize in each was deservedly awarded to Capt. Hornby, whose birds, as usual, were shown in beautiful condition, but there were some other very nice pens of birds, and the whole class was sufficiently good to prove how much interest is taken in this excellent variety of fowl in this locality.

The *Dorkings* were select, but not numerous. In these classes Capt. Hornby was again victorious, but the Mayor of Newcastle, and one or two others, ran him close enough to show that Dorkings also have their admirers in the north of England.

The *Game* fowl were exceedingly good, and in excellent feather and condition; so much so, that we did not at all envy the judges (Mr. Travis, of York, and Mr. Bond, of Leeds) their task of selecting the best out of so much that was good.

The *Hamburgh* classes were but middling. We hope these beautifully-feathered birds are not losing favour, as their more weighty, and, perhaps, more useful competitors, become more widely diffused among poultry fanciers.

The *Polish* were represented by only three pens, and there were a few pens of pretty little *Bantams* of different varieties.

A new feature was introduced, in the shape of a class for a "*Cock and four hens of any breed*," which produced four pens of good fowls. The prize pen of Game especially being most beautiful birds. We shall not be sorry to find this class in future prize lists.

There were a few pens of very good *Pigeons* of different sorts, which we should be glad to see increased in number.

The *Geese* were good, but the interest in them was lessened, we thought, by their being shown singly. Surely a pair might be shown, as was the case with *Turkeys*, of which, however, there were only two pens.

Among the *Ducks*, and in the extra stock, were some good pens, but nothing to call for particular remark; and at the last came a first and second prize, which we should like to see repeated at this and other shows, viz.:—"To the cottager who exhibits the best lot in any of the above classes."

The whole of the details of the exhibition were carried out in a manner most creditable to those to whom the arrangements were entrusted, and the building in which it was held was in every respect well calculated for the purpose. The day was remarkably fine, and was, moreover, a sort of holiday, and the railways ran special trains upon the occasion. In fact, the interest which is spreading itself, far and wide, in these gatherings, has already extended to Newcastle and the neighbourhood; and the exertions of the society were rewarded by an overflowing and most respectable company. The receipts at the doors, which exceeded £75, will, we hope, repay their outlay, and leave them something in hand towards another year's campaign.

If they pursue their interesting and praiseworthy objects with the same assiduity which has marked their efforts during the past year, we anticipate that their next will, indeed, be a first-rate show; and we take leave of them for the present, in the full confidence that their exertions will not be relaxed, and with our best wishes for their future prosperity.

We annex the prize list, as follows:—

Class 1.—COCHIN-CHINA. Cock and two Hens (Coloured).

First prize, Mr. L. Dunn, Byker, Newcastle. Cock, 2½ years; hens, 9 months old. Second prize, Mrs. Wm. Trotter, Healey Mill. Hatched 27th August, 1851.

Class 2.—COCHIN-CHINA. Cock and one Hen (Coloured).

First prize, Mrs. Wm. Trotter, Healey Mill. Late hatched, 1852. Second prize, Mrs. William Trotter, Healey Mill, Newcastle. Hatched May, 1852.

Class 3.—COCHIN-CHINA. Cock and two Hens (White).

First prize, Mr. Jos. Swan, 30, Quayside, Newcastle. Eleven months old.

Class 4.—COCHIN-CHINA. Cock and one Hen (White).

First prize, Mrs. William Trotter, Healey Mill, Newcastle. Cockerel, hatched 24th July; hen, July, 1851. Second prize, Mrs. Dunn, Hedgefield. Hatched May, 1852.

Class 5.—COCHIN-CHINA. Cockerel and two Pullets.

First prize, Mrs. William Trotter, Healey Mill. Cockerel, hatched June; pullets, 25th July. Second prize, Mrs. R. Rowell, Slaley. Cockerel, hatched March 6th; light pullet, April 22nd; darker, June 16th.

Class 6.—SPANISH. Cock and two Hens.

First prize, Capt. W. Hornby, R.N., Knowsley Cottage, Prescot, Lancashire. Two years old. Second prize, Miss Riddell, Cheeseburn Grange. Hatched, 1851.

Class 7.—SPANISH. Cock and one Hen.

First prize, Capt. W. Hornby, R.N. Two years old. Second prize, Mrs. William Trotter, Healey Mill. Hen hatched 1850; cock, June, 1852.

Class 8.—COCKEREL AND TWO PULLETS. (Spanish.)

First prize, Capt. W. Hornby, R.N., Knowsley Cottage, Prescot. Hatched April 28th. Second prize, Mr. R. C. Thompson, Monkwearmouth Shore. Nine months old.

Class 9.—DORKING. Cock and two Hens (Coloured).

First prize, Capt. Hornby, R.N., Knowsley Cottage, Prescot. Second prize, the Mayor of Newcastle.

Class 10.—DORKING. Cock and one Hen (Coloured).

First prize, Capt. W. Hornby, R.N., Knowsley Cottage, Prescot. Hatched April 30th, 1852. Second prize, the Mayor of Newcastle.

Class 11.—DORKING. Cockerel and two Pullets.

First prize, Capt. W. Hornby, R.N., Knowsley Cottage, Prescot, May 1. Second prize, Mrs. Wm. Trotter, Healey Mill.

Class 12.—DORKINGS. Cock and two Hens (White).

First prize, Mr. L. W. Atkinson, Newbiggin, Hexham. Cock twelve months old; hens not known. Second prize, Mr. Thomas Ramsay, Derwent Villa. Eighteen months old.

Class 13.—MALAY. Cock and two Hens.

First prize, Mr. David Hume, Marton, near Middlesbro'-on-Tees. Two years old.

Class 14.—GAME FOWL. Cock and two Hens.

First prize, Capt. Hornby, R.N., Knowsley Cottage, Prescot. Second prize, Mr. R. Robinson, Newcastle.

Class 15.—GAME FOWL. Cock and one Hen.

First prize, Mr. John Charlton, Simpson Street, Newcastle. Four years old. Second prize, Capt. Hornby, R.N., Knowsley Cottage, Prescot.

Class 16.—GOLDEN-PENCILLED HAMBURGH. Cock and two Hens.

Second prize, Mr. Ralph Lister, Scotswood, Newcastle. Cock hatched 1852; hens, 1851.

Class 18.—SILVER-PENCILLED HAMBURGH. Cock and two Hens.

Second prize, Capt. Hornby, R.N.

Class 19.—SILVER-PENCILLED HAMBURGH. Cock and one Hen.

First prize, Mr. Ralph Blackburn (cottager), Slaley. Hatched July, 1851. And second prize in class 42. Second prize, Mr. Ralph Blackburn (cottager), Slaley. Hen hatched 1851; cock, 1852, July.

Class 20.—GOLDEN-SPANGLED HAMBURGH. Cock and one Hen.

First prize, Mrs. Wm. Trotter.

Class 22.—POLISH. Cock and two Hens.

First prize, Mrs. Wm. Trotter. Second prize, Capt. Hornby, R.N.

Class 23.—POLISH. Cock and one Hen.

First prize, Mrs. Wm. Trotter. Eight months old.

Class 24.—ANY OTHER BREED. Cock and two Hens.

First prize, Mr. John Robinson, Grey-Mare Hill—Sussex-breed. Three years old. Second prize, Mrs. Wm. Tweddell, Dunston Hill. Three years old.

Class 25.—GOLD-LACED BANTAMS. Cock and two Hens.

First prize, Capt. Hornby, R.N.

Class 26.—SILVER-LACED BANTAMS. Cock and two Hens.

First prize, Capt. Hornby, R.N.

Class 27.—WHITE BANTAMS. Cock and two Hens.

First prize, Miss Riddell, Cheeseburn Grange.

Class 28.—BLACK BANTAMS. Cock and two Hens.

First prize, Edward Stamp, Esq., Alnwick. One year old.

Class 30.—COCK AND FOUR HENS, of any breed.

First prize, Mr. E. Coulson, Newcastle. Second prize, Mrs. William Trotter, Healey Mill (Dorkings). Pullets and cockerel. Hatched June.

Class 31.—PIGEONS.

Mr. George Fawdon, Gateshead (Almonds), 5s. Mr. George Fawdon, (Almonds), 5s. Mr. George Fawdon, Gateshead (Yellow Bald Heads), 5s. Mr. L. Dunn, Byker (Six Carriers), 1852, 5s. Mr. L. Dunn, Byker (Croppers), 5s. Mr. Stephens, Walker (Jacobines), seven months old, 5s.

Class 32.—GEESE.

First prize, Messrs. Smith and Davidson, Ovington. Two years old. Also first prize in Class 42. Second prize, Mrs. Wm. Trotter (Gander).

Class 33.—AYLESBURY DUCKS. Drake and two Ducks.

First prize, Wm. Greenwell, Esq., Bear Park Lodge, Wotton Gilbert. 1852. Second prize, Mrs. Wm. Trotter. 1851.

Class 34.—ROUEN DUCKS. Drake and two Ducks.

First prize, Rev. F. R. Simpson, North Sunderland. Drake, June; duck, July, 1852; duck, May, 1851. Second prize, Mr. Thomas Ramsay. Two years old.

Class 36.—MUSCOVY.

First prize, G. W. Stable, Esq., Newcastle. Three years. Second prize, Wm. Greenwell, Esq., Bear Park Lodge, Wotton Gilbert. Three years old.

Class 37.—TURKEYS. Cock and Hen.

First prize, Mrs. Wm. Trotter (American). Second prize, Captain Hornby, R.N.

Class 38.—TURKEY. Cock.

First prize, Mrs. Wm. Trotter.

Class 39.—GUINEA FOWL.

First prize, The Hon. Mrs. T. Liddell, Ravensworth Castle.

Class 40.—PEA FOWL.

Mr. John Robson, Newton House, Stocksfield. Three years. Second prize, Mrs. Wm. Trotter.

Class 41.—EXTRA STOCK.

First prize, Mrs. Dunn, Hedgefield (Chinese Gander and two Geese). Second prize, Mr. Charles Wilson, High Street, Gateshead (Spanish Cock and eight Hens).

Class 42.—To the COTTAGER who exhibits the best lot in any of the above Classes, 10s. Second best, 5s.

First prize, Messrs. Smith and Davidson, Ovington, gander, No. 130. Second prize, Mr. R. Blackburn (July 1851), No. 89.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

POLANDS AND HAMBURGS.—There are two subjects that have lately received full consideration in our columns—these are bearded and un-bearded Polands, and the connexion between the Hamburg and Polish families. The respective advocates of different views on these questions have zealously performed their several parts, and the public is thus in a fair position, from the evidence now before them, to make up their own minds on the subject. But whenever fresh matter may appear we shall take care to give it due publicity; and, in the meanwhile, Birmingham and the other poultry exhibitions will be the fittest arena for contending Poles, so here "Poland versus Hamburg" may cease their contentions. The present classification of these families is sanctioned by common use, and we certainly are not of those who desire to see it changed. But while thus expressing our own opinion, let us not be supposed in any way to undervalue the eminent services that the poultry-yard has received at the hands of Mr. Brent and others who have so kindly contributed the results of their past experience on these subjects of inquiry. Rapid strides have been made of late, both as regards the history and management of farm-yard poultry, and we see no reason why still further advances may not disclose to us what may serve to unravel and explain many subjects of present discipline. Our readers, therefore, may be assured of our diligence in this respect; and that while we say "enough" on matters that, as we think, have sufficiently occupied their attention for the time, and where no new features are brought forward on either side, all that concerns either the natural history, or the management of poultry, will be the objects of our immediate care.

GOLDEN-SPANGLED POLANDS (S. P.).—The colours of your spangled feathers are good, though we should wish to see the spangle more clearly defined. The question of the Poland's comb has been fully discussed in our paper. The prize-birds at Birmingham had the small pointed comb

you refer to, but very slightly developed in the hens. The usual form of the cock's top-knot is that of a full crest, falling over on the sides and the back of the neck, and composed of feathers similar to those on the hackle; while the broad crest feathers are usually limited to the hens. The more generally and uniformly the spangle is displayed so much the better; but a rich chestnut-bay is generally seen on the back of the male birds, matching in colour the feathers of the top-knot, and such fowls have been honoured by many premiums. The *spangle*, we need hardly remind you, is usually much more distinct and general in the plumage of the hen; and very few Polish cocks of this variety are wholly free from white markings. If you would send your direction to our office, we should be glad to communicate with you on the subject of Polish fowls, beyond the necessarily restricted limits of our answers to correspondents.—W.

SUPERIOR YOUNG GARDENER (E. F., Brighton).—Be kind enough to let us know the wages you would be inclined to give for the "Young Paxton." We have no doubt we can find one to suit you, and who will come up to your expectations.

W. C., Lynn.—We shall answer you fully next week.

CUCUMBERS IN A GREENHOUSE IN SUMMER WITHOUT FIRE-HEAT (A Greenhorn).—You may manage this in two ways. If you keep your house as a greenhouse, you will manage some of the short kinds very well; but no better than under a bell or hand-glass, on a ridge, out-of-doors, and at the risk of infecting what greenhouse plants you keep in, with fly, spider, and thrip. If you move all your hardy plants out by the beginning or middle of June, or even earlier, and by shutting up your house early, and not giving too much air, you can easily command a night temperature of from 55° to 65°, and a day temperature, at noon, of from 15° to 20° higher, as we have often done in similar circumstances, then you may grow first-rate Cucumbers, of the long kinds, from the middle of June to the end of September. If this is your object, then we would advise you to sow in your small hotbed shortly after you read this. Pot the plants off singly when up, and pot again, and get hardened by more and more air until June; then transfer, as you propose, to large pots in the greenhouse; use light, rough, rich soil; leave fully one-third of the pot, near the rim, unoccupied, as that will enable you to give very frequent top-dressings of rich open compost, such as peat, loam, cow-dung, and charcoal. Train your plants to a stick until they reach the rafters, and then fasten them to them; and with the necessary attention to pruning, stopping, and a good syringing at least every afternoon, and shutting up early, and giving a little air early in the morning, you will find a delight in Cucumber growing, which no attention to them in a bed could ever supply; as the great interest is to see the fruit hanging down from the roof as straight as gun-barrels. Keep in mind that, as a general rule, the longer the kind the more the heat required.

CUTTING DOWN DATURA (Ibid).—You may do this when you like, if not too severely, and without taking it from the greenhouse; but if you lop it severely, it will be the better for the slight hotbed to start it again. The cuttings will strike under the hand-light in the greenhouse; but if you keep it there until it is growing freely, and, consequently, the shoots are more succulent, they would then also be the better of the slight hotbed.

TEA ROSES (Nemo).—These were planted out, taken up, and potted, and are intended to bloom in windows. You did quite right; the error was in planting them out, even under a frame, during frost. It would have been better deferred to April, or even the beginning of May, with such kinds. They will do well in the slight hotbed; but beware of much bottom-heat, or present verdure will be bought at the expense of future weakness. Do not let the bottom-heat be quite so hot as new milk. Give more air by degrees, until in a month the glass may be removed during the day. You cannot expect them to bloom in the window until the end of May, or beginning of June, at the nearest; and neither should you encourage above one or two blooms at first from such tiny things.

OXALIS BOWENI (Ibid).—This potted 15th January, and all right—do not force. You had better examine them, but from your description we think they are all right, and they will blow better if allowed to come above ground without any forcing. See an article on the plant last season.

NEGLECTED GREENHOUSE (Amicus Florium).—We rather think you could instruct us, for we should hardly have been successful in saving so many plants—and the stove unlighted for a very considerable time. As far as you have gone you have acted right—beware of over-watering. As the plants are small and sickly, and you want bloom to look at, shut up the house early in an afternoon, sprinkling or dousing the foliage with tepid clear water. As growth proceeds increase the air, which, in unison with small pots, will hasten on the flowering process. Your Cactuses, if not now showing flower-buds, will not blow early; but they should be potted in sandy loam and brick rubbish, if not done. Your Fuchsias, we fear, are in a similar predicament. See what was said about them the other week, and shape your course accordingly. The directions are as applicable to the owner of one plant as to the possessor of thousands. Calceolarias, too, will soon be out, but your Verbenas will be better out-of-doors after May, and if the shrubby kinds, so will the Calceolarias. We think you will have a fair show from your Geraniums. As we suppose you have no hotbed, we have no great choice of annual seeds for blooming in the greenhouse in summer to be sown now; but Balsams would give you a fine display after the beginning of July, if sown now in a warm corner of the house, and the pot covered with a square of glass until the seedlings are up. After this season they will stand the usual routine of the greenhouse, and be all the bushier in consequence. See mode of management lately detailed. All the pretty blue trailing Lobelias sown now will bloom in July. Many annuals would bloom now in the greenhouse, if sown in autumn, and saved over the winter. Directions were lately given about a Vine in similar circumstances; if you would give us a more circumstantial account of its appearance, we would give specific instructions. You must not despair, though you cannot make the old lumber-house a Paradise at once. Under your care, and atten-

tion to cleanliness, we feel confident it will soon be a little Eden. The first opportunity have the stove thoroughly examined, cleaned, and tried. You will have seen, from many articles, what greater things you may do with vines, and plants likewise, if in dull, foggy weather you can command a little artificial heat. We will think over the whole of your case. You do not say what your *Geraniums* are, scarlet or florist's Pelargoniums. In either case, if you mean to keep them in the house, and wish early flowers, let part stand in small pots, shift another part into larger pots, and they will come in in succession. The treatment of these has lately been given; and rest assured that whatever you wish to do well, the treatment recommended in these pages is as applicable to you as to the gardener of an Emperor.

POLAND FOWLS (An Exhibitor of Polands).—We have reason to believe that both bearded and beardless Polands will contend together at Birmingham, and elsewhere, during the present year, on a footing of perfect equality, as regards the presence or absence of that appendage. The separate classes for the two have, indeed, been done away, as also those for the double and single-combed Dorkings, but we have no cause to think that any condemnation of either was thus implied.—W.

SPANISH HEN CHANGING IN COLOUR (C. L. Floyd, Holmfirth).—The singular change of colour that you describe, after moulting, is not unfrequently noticed in the Spanish family; though seldom is the metamorphosis so complete. We have, ourselves, seen black birds assume a mottled plumage, and we remember an account by one of the French naturalists, where this change of colour was continued year after year, from black to white, with various intermediate combinations.—W.

MANY QUESTIONS (Crinna).—You have so loaded your letter with questions, that we cannot do justice to one of them. *Coal ashes*, right. *Azulea forcing*, too sudden, but go on. Sixpenny packets of *Cineraria seeds* have been sold, from which as many good plants were raised as from a 5s. packet. All *fancy seeds* are charged according to the respectability of fair dealers, or according to the rascality of cheats. The Association do not pretend to cure all this, but they will obtain for you from the large dealers the best articles at the lowest prices. It is yet too soon to "plant out" dried *Scarlet Geraniums* where they are to flower, but they ought to be out now in soil where you could cover them at night. *Small Rhododendrons* will do to pot for flowering early indoors; and so also suckers of tree *Pæonies*. *Cyclamens* must not be divided at all. *Clanthus*, plant out when the frost is gone. *Camellias*, plant out when you have time; any time suits them. Any soil that will grow good early cabbages will do for both. *Browned Laurustinus*, cut off the brown by the end of the month.

STOVE CLIMBERS (X. Y. Z.).—"The very choicest" of any thing no one can say, except for him or herself, but these are very good stove climbers. *Passiflora kermesina*, *Echites suberecta*, *Bignonia venusta*, and *Stephanolis floribunda*. For the four *Greenhouse climbers*, take *Sollya linearis*, *Hardenbergia digitata*, *Zichya villosa*, and *Mandevilla suaveolens*, or *Bignonia Tweediana*. For the *back wall of a vinery*, no plants are more suitable than some good varieties of Oranges and Camellias, the shade of the vines will not allow the leaves of less tender plants to perform their office, and without that no flower can be had. September is the best time to transplant *Laurustinus*, *Myrtles*, and *Bay trees*.

NEWLY-POTTED PLANTS (M.).—A gardener put some newly-potted bedding plants on the top of an old-fashioned flue in a vinery, and frost coming on very soon afterwards, a fire was lighted, and at bed-time the vinery was up to 54°, and the flue under the pots was 120°, by guess. The gardener was blamed for this style of forcing; and he defended the practice, and affirmed, "that he did it to warm the earth in the pots, and that he was certain that no harm could happen from it." We are appealed to for the theory involved in night heat and "nocturnal roasting." Well, gentlemen, you are both wrong, and each of you are right. It is very proper to warm the earth for newly-potted little plants, at this season; but roasting them is out of the question. To get a lot of little bedding plants established as soon as possible after potting, bottom-heat is as good for them in the night as in the day time. If the flue had been watched it was not a bad place for the little pots, but they ran a great risk. As the plants are safe, both of you ought to be thankful.

PRICES OF POULTRY (Este).—It is quite impossible for any one to foretell how long the present high prices will continue. Good birds will always fetch high prices, and these, of course, will be higher just in proportion to the demand for them exceeding the supply. That the prices still rule very high is shown by the results of the sales at Mr. Stevens's on the 5th instant. The birds had no extraneous interest excited in their favour by being brought from well-known yards, yet lot 32, "a White Cochon Pullet, heavily feathered, sister of Metropolitan prize pullets, hatched in August, bred from an imported white hen," fetched £16. Lot 52, a Buff Cockerel, one of Mr. George's best bred birds, £11. Many other lots fetched from £3 to £7 each.

PINUSES (A New Subscriber).—We cannot recommend nurserymen; all the leading nurserymen and seedsmen are respectable. Your plants would have to be obtained some from one and some from another grower, which we cannot undertake to do. You could obtain them all through the Horticultural and Pomological Society.

FURZE FOR COVERING A BANK (X. Y. Z.).—To sow furze seeds on the rest of your bank is by far the cheapest way to cover it, and one of the most formidable fences you can make. About the end of April will be time enough to sow the seeds. Sow broad east, and look after mice.

COVERING A NEW WALL (J. C. F.).—You put the cart before the horse when you ask us the best in fruit or flowers to grow against your new built wall. You ought to ask for what you like best; we would plant no fruit trees, nor flowering climbers on such a new wall if we had it, but cover it with glass, and make an orchid house of it. If you fix on it for fruit, the following Pears will answer your purpose:—Glout Moreau,

Passe Colmar, Ne Plus Meuris, and Beurre Rance; or if you determine to adopt flowers, all the Ceanothuses will suit; or better still, those half-hardy plants mentioned by Mr. Appleby. But why write about planting so late—only daft folks put off, or think of planting so late as this.

FANCY GERANIUMS (S. S.).—If you have enough of them, including your *Ibrahim Pacha*, they will make the best possible match for the shot-silk bed, but without an edging of any kind. An edging of scarlet never looks well round a mass of shades, as in the fancies. The *Saponaria calabrica* would make the best match to your *Senecio* and *Eriogonum prostratum* in the trefoil-bed, or the reddish-pink of the pink *Ivy-leaved Geranium*. The *Sultan Catceotaria* will not agree with your other two, if you have the true one. Unless you want a strong contrast, *Lady Mary Fox*, *Gooseberry-leaf*, and *Lady Plymouth*, will never do together in a trefoil-bed; her ladyship will put down the other two. Strong plants of the *Gooseberry-leaf* might do with a good *Diadematum* or *Quercifolium Geranium*. See what Mr. Beaton says to-day.

EGGS WITH IRREGULAR SHELLS.—Mr. Lort says—"I have a healthy-looking black Shanghai hen, that has for many weeks continued to lay eggs with very irregular shells. This irregularity is not one of thickness alone, for the inside presents a similar appearance. Would this be caused by a cartilaginous thickening of the oviduct?" [I should attribute the irregularity here described to a slight degree of chronic inflammation in the oviduct, which has not proceeded so far as to cause cartilaginous thickening; and should certainly advise that the parts be allowed to rest. This would, I think, be best accomplished by feeding the hen on plain boiled rice, which contains very little egg-forming material, and giving one grain of calomel, and one-twelfth of a grain of tartar emetic, to reduce the inflammatory action. After the hen's ceasing to lay for two or three weeks, I should think the parts would be so far restored to a healthy state that perfectly-formed eggs would be produced.—W. B. TEGETMEIER, *Tottenham*.]

INSECTS (Rev. H. Helyar).—The insects found on the surface of water in the open air, and supposed to be a sort of blight, are the small species of *Lepisma*, or Spring-tailed insect, often found in clusters on the surface of the ground in the winter, and which are also often seen floating on little puddles of water, their silky coats preventing the action of the water. They are not injurious to vegetation, feeding, I believe, entirely on decaying vegetable matter.—I. O. W.

SHANGHAI COCKERELS DISEASED.—J. Perring says, "I have lost one, and two others are ill with the same complaint of which their companion died. They have had their liberty all day, a warm house at night. The first appearance of illness was want of appetite, the comb becoming dark and scaly. There was a thickening under the tongue, which was removed, and a little butter applied, warm and soft food given, and the bird placed alone in warm quarters. There is now a rattling in the throat, which is very thick, and a lump in it." [From the symptoms here described, I should suspect an inflammatory, or thickened state of some of the digestive organs, probably similar to the case described at page 450; there is now, evidently, a low inflammatory state of the mucous membrane of the throat. This I should treat with a large mustard plaster round the neck, and endeavour to restore the general health by such means as half-grain doses of calomel, and one grain of simple powder of ipecacuanha, given every night for three or four days, keeping the bird warm, and giving it soft food only. If my surmise as to the internal disease is correct, the case is not likely to turn out favourably.—W. B. TEGETMEIER, *Tottenham*.]

UNBLANCHED CELERY (A Subscriber).—This is not so wholesome as when it is blanched, having tougher woody fibres; but we do not think that unblanched celery is poisonous.

BELL GLASSES (A. R. and many others).—We do not know of any manufacturer in England, at present, from whom they could be obtained.

POULTRY HOUSE (C. G.).—You will have seen an answer in a recent number. Brick is more substantial than wood; but our own poultry houses are built of wood, lined with straw or reeds, as described in the first number of the "The Poultry Book" just published. There are plans there which will suit you. Do not have the floor paved. Chalk, rammed hard, and covered daily with a sprinkling of sand, is far better. The door and windows properly attended to give sufficient ventilation.

LARK (R. B.).—If you buy our 198th number you will find what you require as to its management.

EGG-LAYERS.—T. O. T. writes thus—"I see the question so often asked in your paper, 'What breed of poultry is most profitable to the cottager?' that I cannot help requesting some of your correspondents to favour us with an account of the number of eggs produced by their various breeds during the past three or four months, stating how many hens or pullets they have, and of what breed, as I think you will allow that no period could be better selected to prove what sort of poultry will be most advantageous to the cottager. I am most willing to commence with what little I know. I have four pullets and a cock, very fair specimens of Shanghai, but I do not think quite pure. I bought the cock and two pullets in November, and they commenced laying on December 1; on the 4th, I bought two more pullets, which began to lay on the 8th. My account since then shows as follows:—December, 54 eggs; January, 23 eggs; February, 51 eggs; March, 46 eggs. On March 4 I set one on thirteen eggs, and have twelve very healthy chickens. On March 23 I set another; and, on the same day, I put another in a coop, from which she was released on the 29th. Are pure-bred Shanghaes better layers than these?" [The average of the preceding table gives only about eleven eggs per month to each of the four pullets, which is a very small number for Shanghaes. When these begin to lay, they scarcely miss a day until they become broody. We have one pullet that laid 99 eggs in 112 days, since the 15th of December, and is still (April 6) laying.]

EGG-EATING PULLETS.—I would recommend your correspondent to use an artificial nest-egg, and to have the pullet closely watched while laying, in order that the newly-laid egg may be immediately removed.

In a fortnight the hen will probably have forgotten all about egg-eating. When too many hens are allowed to lay in the same nest, quarrels ensue, eggs are broken and eaten, and then a habit is contracted which is only to be overcome by attention and patience. W. LORT.

LYCOPODIUMS AND FERNS (Lycopodium).—We know of no work upon the culture of these in a greenhouse. Mr. Appleby will take up the subject before long.

HARTLEY'S FLUTED GLASS (D. P.).—We should have the fluted surface inside the house.

PLANE TREES (Improver).—No one has a right to have the branches of their trees hanging over your garden. There is an old law phrase, that all above and below the surface, from the earth's centre to the sky, belongs to the landowner. There are many ways of killing the trees, but remember, your neighbour has rights which must be respected. We should cut through the invading roots, and then ram the trench full of chalk; the roots would turn from this unfertile mass.

COCHLEARIA ACAULIS (W. L. B.).—If you cannot get it of your seedsman apply to the Horticultural and Pomological Association. It grows well in the open borders. Our double *Hepaticas* are propagated by dividing the plants. The *Beltis perennis* can only be improved by hybridizing.

CROWING HEN.—D. J. F. says, "I think the advice which 'K.' gives to 'Chicken-Hearted,' is not altogether sound, nor can I agree with him that a hen must be an hermaphrodite because she crows; much less, that she never did lay, nor ever will. My own experience proves the reverse of all this to be true. The hen from which I bred most last year, but which I did not exhibit, upon being deprived (during the period of the Birmingham Show) of the company of the cock, crowed frequently daily until the cock was brought back, when she ceased. She is a very spirited hen, and rather a vixen, but a remarkably good layer. I am aware that farmers consider a crowing hen 'unlucky,' but I have not yet found any ill-luck follow, and do not expect any."

BEES—EXCESS OF DRONES.—"Observing in your COTTAGE GARDENER, of the 24th ult., a reply to a 'Country Curate' respecting the excess of drones, I am induced to report the case of a very strong stock with me during last spring. I left home on the 18th May, with every reason to think the bees were working admirably, as all the comb I could see, and which lay with the cells to the little window in the hive, was well filled and sealed over; and I had not, at this time, observed any drones. On my return, on the 18th June, the cells were all cleared out, and my gardener informed me that on looking at the hive he had scarcely seen anything but drones. I would ask, do you advise destroying them when they appear so numerous? (No.) I should observe, I do not destroy my stocks. In another swarm, which I hived on the 4th of June, I observed, before the end of July, the drones in a chrysalis state were ejected from the hive. The last season was ruination to me, and I suspect most bee-keepers found it very bad.—BROADSTAIRS."

TAXIDERM (T. M. W.).—Will some ornithologist oblige our correspondent by stating which is a good and cheap book upon this subject.

GUTTA PERCHA HOSE (C. C. W.).—Our experience is not favourable to this when used in lengths of fifty feet and more. It becomes so bard and intractable. We think that short lengths, with joints of vulcanised Indian rubber, might be made more manageable. Have any of our readers found a mode of rendering gutta percha tubing more tractable?

DISEASED HAMBURGH HEN.—"A Spangled Hamburg hen ceased laying to-day. I noticed her standing moping with her eyes shut. I caught her, and found she was very thin. Whilst in my hand, she vomited nearly a quarter-of-a-pint of thin, whitish fluid; the eyes, when opened, were bright, and her breathing regular, with no discharge from her nostrils. What is her malady? and what should be the remedy? She, like the rest of my fowls, are fed with barley-meal warm twice a-day, barley and wheat as a standing dish, with worms, and cabbages three times a-week.—M. B." [It is impossible to determine the nature of a malady from so short a description of symptoms. The glaucous fluid vomited is the natural secretion of the crop, employed in softening the food; the thinness may possibly arise from some disorder of the digestive organs. Give the hen a teaspoonful of castor oil, mixed up with some dry barley-meal, in which form it is readily taken, without the excitement occasioned by forcing it down the bird's throat.—W. B. TEGETMEIER, *Tottenham*.]

CROWING HEN.—Your correspondents respecting crowing hens are certainly in error in thinking they neither sit nor lay, for I have now a white Bantam which used to crow constantly, and she has proved to be the best sitter and layer I have. She has now one chick, and being recently removed into a pen by herself has recommenced the practice. Another instance to which I can refer, is a hen belonging to a friend of mine, which was kept alone in an outhouse, and having no companions used to crow for amusement. She was an exceedingly good layer, but, of course, never sat. Some persons have a prejudice against crowing hens, but I do not find anything so objectionable in the practice.—A. E. TAYLOR, *Birmingham*.

NAMES OF PLANTS (Devoniensis).—The blue, *Polygala vulgaris*; the yellow, *Berberis asiatica*.

NAMES OF FERNS (A Lady Gardener).—The large-leaved is the common Maiden-hair, *Adiantum capillus-veneris*; the other, the Wedge-leaved Maiden-hair, *Adiantum cuneatum*.

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WEEKLY CALENDAR.

M D	W D	APRIL 21—27, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In						
21	Th	Sun's decl., 11° 56' N.	30.074 — 29.957	61—37	S.E.	—	53 a. 4	4 a. 7	4 27	13	1 22	111
22	F	Early Grey; paling.	29.833 — 29.821	70—43	S.E.	—	51	6	4 46	14	1 35	112
23	S	St. George.	29.961 — 29.842	68—42	E.	—	49	7	rises.	☺	1 47	113
24	SUN	4 SUNDAY AFTER EASTER.	29.903 — 29.896	53—33	E.	—	47	9	8 a 36	16	1 58	114
25	M	ST. MARK. PRS. ALBERT BORN 1843.	22.922 — 29.900	54—30	E.	—	45	11	10 6	17	2 9	115
26	Tu	[DS. GLOU. BORN 1776.	30.071 — 29.953	63—27	N.E.	—	43	12	11 23	18	2 19	116
27	W	Insulated Carpet; woods.	30.168 — 30.141	55—25	N.	—	41	14	morn.	19	2 29	117

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 59°, and 38° respectively. The greatest heat, 75°, occurred on the 23rd in 1842; and the lowest cold, 25°, on the 25th in 1827. During the period 96 days were fine, and on 86 rain fell.

HOOKER'S BALSAM.

(*Impatiens Hookeriana*).



This is a large, white, handsome species from the island of Ceylon, whence it was sent by Mr. Thwaites to our national garden at Kew, where it flowered last summer, after attaining the height of from two to three feet. The plant has been long known to science, from dried specimens sent home by Mrs. General Walker, who first named it in compliment to Sir W. J. Hooker. It has much of the character of the now common Himalaya Balsams, and comes near to *Impatiens candida*, but the spur is much longer than in that species. The nearest to it is *grandis*, a species not yet introduced, but known from Heyne's description of it in the ninth volume of the *Madras Journal*. It produces from four to six large white flowers in a head; the bottom or lower part is richly marked with purple veins; the spur is unusually long, and shaped like a huntsman's curved horn. Ceylon, and the whole Indian Archipelago, together with the Indian Continent, swarm with handsome species of these Balsams, wherever the circumstances favourable to their production are present, viz., a moist climate and a moderate temperature. A dry, hot atmosphere is alike inimical to the whole race, in nature, or under cultivation. Hence, one species only is found in Madagascar, while, according to Dr. Wallich and Dr. Wight, the shady places on hill-tops enjoying a mean temperature of 70° during the Balsam season, abound with them all over India. Great numbers of them inhabit regions of a lower mean temperature during the seasons of their greatest perfection.

Balsams, though "common as household words," have been the subject of much dispute among botanists as to the

real nature of the parts which compose the flower. Achille Richard in 1822, Decandolle in 1824, Kunth in 1827, Röper in 1830, Wight and Arnott in 1834, Wight (*Mad. Journal*, 1837), Bernhardt in 1838, and Lindley (*Bot. Reg.*) in 1840, with other men, able, but of less note, have offered very opposite views as to the nature of the floral parts in the flower of a Balsam, but Kunth and Lindley are now considered as having set the discussion on a proper basis, if not at rest. According to them, this flower, however irregular it may appear to the unlearned, is formed on the usual plan of regular structure; five cells to the ovary or seed-pod; and five stamens alternating with the cells. After these the flower is composed of two inner and two outer pieces, and each piece is composed of two lobes joined together by their edges; then, if each of the two innermost pieces were set free, they would fall into the places assigned to petals, or alternate with the stamens. The two outermost pieces, when set free, will fall into the places of four divisions of the calyx, and the spur forms the fifth division of the calyx, giving a regular flower on the quinary type, with the exception of the fifth petal, and that is supplied in some plants belonging to the order, *Hydrocera triflora* for instance, this completing the quinary, or five-part system—five cells for seeds, five stamens to fertilize them, five petals to house them, and five sepals to thatch the whole in one bud, or as Linnaeus put them, *Pentandria Monogynia*.

At Kew, in the stove, this plant is between two and three feet high; leaves large, pointed egg-shaped, saw-toothed, smooth; leaf-stalks varying from one to four inches long, with two oblong glands near the upper end; flower-stalk usually longer than the leaves, and bearing an umbel of four or six flowers. It seems to be the *Impatiens biglandulosa* of Moon's Catalogue of Ceylon Plants, and is figured in the *Botanical Magazine*, t. 4704. B. J.

Propagation and Cultivation.—The *Sulvias* now common in the borders, and even the *Chrysanthemum* itself, were once supposed to need the aid of the stove to bring them up to perfection. It is just the same with Indian Balsams like this. The first plant of this breed that I saw was one about a yard high, and nearly as much through, a little above the pot. It was in a late vinery, and about the end of July, and I shall never forget the shudder it gave me all over. The gardener was an old friend of mine, and the place one of the largest near London, and there were more red spiders on that Balsam than, I should think, were then in the whole county of Middlesex! Since then I have known the seeds of this very kind of Balsam to have been exposed to forty-seven degrees of frost; that is, five degrees below zero, without suffering in the least; but what is more curious, sow some of the seeds in two pots, and put one pot in a hotbed, and the other pot in a bed of cabbages, and the latter will give you plants sooner than the other, nine times out of ten.

All the Indian Balsams, as they are called, that we know of in cultivation, are just as hardy as potatoes, if not more so; and this one from Ceylon looks as if it were in relationship with the Himalayan ones, and very probably, when we have enough of it for the experiment, it will grow out in the open air as well if not better than in-doors. It is very likely that the herbage of this one will be killed by the first frost in the autumn, but then it is so easy to keep a few of them from cuttings in stove pots, and these few can be extended in the following spring, by cuttings, to any extent, as they root more freely than Fuchsias or Verbenas.

There is one use for which I want particularly to recommend this plant—first, as an experiment; and, secondly, if it proves to be what I anticipate, to be used in future along with *candida*, *glanduligera*, and all such, in filling up, for the first two or three seasons, the open spaces in newly made shrubberies. You never saw a new piece of ground planted with shrubs or ornamental trees that was not too thickly planted at once, or not half thick enough; and I never yet saw a shrubbery ten years old that was not ten times too thick, no matter how it was planted at first. The right way to plant shrubberies is to make choice, first of so many good kinds of evergreens, so many deciduous shrubs, and so many half-tall trees; to plant them all on one general plan—that is, in a regular mixture, or in groups, to allow them room enough for the first twelve or fifteen years' growth, without hurting one another, and then to fill in between them with a very common mixture of the cheapest things that one can buy in the nearest nursery, and to weed out these common things from time to time, as the specimen plants grow on. Now, instead of buying so many of these common things for this purpose, it is ten times

better to sow all over the ground lots of the seeds of such things as these—*Balsams*, *Double Poppies*, and *Foxgloves*, for the back parts; and *Larkspurs*, *Selines*, *Lupines*, and similar hardy things in the front parts. It is true enough, such things will rob the soil to a certain degree, but then the closeness, and finished looks, the flowers, and the shade for the newly-planted things, are surely worth a deal more than the robbing, which can be made good next winter, with a few barrowloads of dung. When a gardener talks to me about one plant robbing another, the great difficulty, and the bother of this or that move which did not rise in his own mind, I begin to think that his grandmother had to bring him up by the spoon, and that the man ought to be pitied rather than be found fault with, until by experience he learned to know better. At all events, it is not yet too late to sow the seeds of all these things, as I have just said, in every open space you can see between the things that have been newly planted this spring. A large patch here and there will do, but recollect to leave space to get along to do the watering.

D. BEATON.

THE progress of *The Crystal Palace*, at Sydenham, continues rapidly and satisfactorily towards completion; and although, for various reasons, it will not be thrown open for public admission this summer, yet it will be visitable by those who obtain tickets under regulations hereafter to be determined. The following extracts from the last report of the Directors, and from Mr. Laing, the Chairman's speech, are full of interest—

"After the purchase of the building, the first step taken was to secure an appropriate site. For this purpose it was found expedient to purchase a much larger extent of land than was actually required for the park, in order to secure the assent of adjoining landowners, and to effect diversions of public roads.

"The principal purchase was that of Mr. Schuster's park, consisting of 171 acres, which that gentleman most liberally allowed the Company to take at its then existing market price, as determined by a valuation. The price was referred to Mr. Daniel Smith and Mr. Norton as Referees, with Sir John Musgrove as Umpire, and settled by them at £86,661 12s. 8d. The other purchases comprised 178 acres, at a total cost of £81,000, so that the Company on the whole became proprietors of 349 acres, at a cost of £167,661. The policy of securing sufficient land before its value had been enhanced by the construction of the palace soon became apparent, as a portion of the surplus on the outside of the park has been already disposed of at a large profit. An offer made by Mr. Wythes, of Reigate, of £100,000 for 149 acres of this land, has been accepted, which, with some other small portions sold, will show a profit of £51,000, which has been realised in the course of a few months by the re-sale of land. The Company still retain 200 acres, within a ring fence, of land of the most valuable character.

"The necessary space being secured, the determination of the position of the palace thereon became a matter of anxious consideration, and the summit of the hill above Sydenham was finally selected. This site, owing to the nature of the ground, involved an increase of expense, but the advantages of occupying one of the most commanding situations in the world, overlooking London, the valley of the Thames, and the plain of Kent, were so apparent, that the Directors did not hesitate to adopt it."

Mr. Laing said—"I do not wish to enter into details of what our plans are, and I will merely say, as a general result, that the outdoor portion of the undertaking, the park, with its terraces and gardens, and cascades and water-works, will be quite as wonderful, as magnificent, and as striking, in their way, as the Crystal Palace itself; and, therefore, that we should be able to promise you that we are in a position to carry the whole out on such a scale as, I think, a circumstance very satisfactory. I think the result of the Exhibition of 1851 tends to show us, that the principle of the Fair, the collection of a great concourse of

people in a place where a great number of things may be seen to great advantage, is not entirely superseded. I think every one of us must feel its advantages. To take the simplest illustration,—in the purchase of many articles of daily use, what a convenience and advantage it would be to have a permanent exhibition, like that of 1851, at our doors, where we could go and select the articles we wanted at once. I dare say it may have happened to some of you to have to accompany a wife, or daughter, or some female relative, to choose a piano, and in that case you must know what a troublesome undertaking it is. You have to go from one warehouse to another, and to try one piano after another, and when at last you get to Collard's, you forget what you have seen and heard at Broadwood's; but suppose this exhibition exists, we shall then have the choicest productions of all the best firms placed side by side, and, I would ask, is there anybody who would make a circuit of all the London warehouses to choose a piano, when he might run down with his wife and daughter to the Crystal Palace, and try them all, and make up their minds and decide satisfactorily on the spot. That is only, of course, one illustration. I do not mean to say the Crystal Palace will become a place of retail trade, where tapes and ribbons will be sold across the counter; but I do think that, wherever expensive purchases of articles of an ornamental character are to be made, it is extremely likely that the Crystal Palace will be resorted to to a very great extent. Mr. Belshaw, who is well known as having had the charge of the whole department of British manufactures in 1851, has been in communication with a wide circle of manufacturers and others throughout the country. He tells us that even at the present moment the applications for space are such, that if you take the lowest figure, the present applications would realise a rental of some £40,000 a year. Mind, that is, taking, as the average of the whole, the lowest figure that has been offered by any one. If we take the highest that has been suggested, our £40,000 might swell to £100,000, or £120,000. Now, I never like to be too sanguine in these things; but I do say that it seems to me that there is a fair prospect, if we manage the thing properly, if we open the building at the right time of the year, and with proper *clat*, of realising a permanent income of from £50,000 to £100,000 a year from that source alone. You will see that our undertaking now is not a solitary one. We are to have Crystal Palaces all over the world. There is one at Dublin, one at New York, and another at Paris; and as regards their bearing on our undertaking, I may say that I believe we shall all mutually aid and assist one another. We do not feel the slightest jealousy towards any of these undertakings; we do not believe they do towards us. On the contrary, there is every disposition towards mutual aid and co-operation. And more especially as regards that great undertaking at Paris, which is more nearly parallel with ours, as that is also to be a permanent construction, I may express a feeling which I am sure will be heartily responded to, that I would very much rather see France and England engaged in a friendly rivalry as to which shall produce the best Crystal Palace,

than I would hear of their building screw line-of-battle-ships for the destruction of each other."

EVERY year, and every research, tends to demonstrate the amount of ignorance which yet prevails relative to the cause of the *Potato Murrain*. We have, until now, entertained the opinion that the unnatural treatment the plant and its tubers annually have passed through for centuries might have laid the foundation for this disease. This opinion, however, seems refuted by the fact, that other tuberous-rooted species of the same genus, recently imported direct from their native places on the South American continent, are attacked in Europe by the same disease. The common Potato, most of our readers know, is the *Solanum tuberosum*; but now, from experiments tried in Germany on the *Solanum utile*; in the Horticultural Society's Garden on *Solanum demissum*, brought thither from Mexico; and by M. Decandolle, in France, on *Solanum verrucosum*, also from Mexico, also that their tubers, it is demonstrated, speedily become affected with the murrain.

It is very probable that the price of *Black*, or *Grocers' Currants* will be much higher than usual this year, for we find that a tenth part of the Vines in Cephalonia have been destroyed by disease, and that the growers and merchants of the Ionian Islands are uneasy at the prospect. A very beautiful coloured drawing of a bunch of the *Black Currant Grape* is in the first volume of the second series of the Horticultural Society's Transactions. Another Grape which probably has suffered by the visitation is the *White Corinth*, the stoneless fruit of which is known in the shops as the Sultana raisin.

THE East India Company have placed a ton in weight of seeds of *Deodar Cedar* at the command of the Government, and it has been calculated that if they all vegetate they will produce sixteen millions of seedlings. These seeds have been entrusted by the Government to Mr. Glendinning, of Chiswick; Messrs. Lawson, of Edinburgh; Mr. Skirving, of Liverpool; and Mr. Waterer, of Knap Hill. This will be a most valuable addition to our timber resources, for not only is the *Deodar* to be admired for its beauty of form, but for the durability of its wood.

At a meeting of *The Royal Agricultural Society*, on the 6th instant, among other business the following was transacted:—

PRIZE ESSAYS.—Mr. Pusey, Chairman of the Journal Committee, reported to the Council the following awards made by the judges of essays and reports, competing for the prizes offered by the Society:—

- I. To Sydney Evershed, of Albury, near Guildford, Surrey: the Prize of Twenty Sovereigns for his Essay on the improved method of cropping and cultivating Light Land, being the best Essay in the class of "Any other Agricultural Subject" for 1852.
- II. To John B. Spearing (Land-surveyor, Engineer, and Farmer), of Moulsoford, near Wallingford, Berkshire: the Prize of Thirty Sovereigns, for the best Essay on the relative advantages of Steam or other motive power applicable to Agricultural Purposes.

III. To Thomas Rowlandson, of Brompton, Middlesex: the Prize of Fifty Sovereigns, for the best Report on the Farming of Herefordshire.

IV. To Henry Evershed, of Albury, near Guildford, Surrey: the Prize of Fifty Sovereigns, for the best Report on the Farming of Surrey.

V. To John Jephson Rowley (Land Agent, and Valuer of Land and Tillages), of Rowthorne, near Chesterfield, Derbyshire: the Prize of Fifty Sovereigns, for the best Report on the Farming of Derbyshire.

VI. To Finlay Dun, jun. (Lecturer on Materia Medica in the Edinburgh Veterinary College), of 41, Heriot Row, Edinburgh: the Prize of Twenty Sovereigns, for the best Account of those Diseases in the Sheep and the Pig, which either are or may become hereditary.

VII. To the Rev. Thomas Burroughes, of Gazeley, near Newmarket: the Prize of Twenty Sovereigns, for his Essay on the Bean Turnip Fallow, as the best Essay in the class of "Any other agricultural subject" for 1853.

The Council arranged that Professor Way's first lecture should be delivered to the Governors and Members in the Council-room of the Society, on Wednesday, the 11th of May next; and the second lecture on Wednesday, the 15th of June; to commence in each case at the usual hour of 12.

SECRETARY.—On the motion of Mr. Pusey, seconded by Mr. Fisher Hobbs, and supported by Mr. Thompson, Colonel Challoner, and Lord Chichester, the following resolution was passed by the Council unanimously:—"That on account of the Secretary's long, faithful, and efficient services, his salary be raised by £100 a-year: and that the first payment of the increased salary commence in May next."

AGRICULTURAL STATISTICS.—The President informed the Council, that having been summoned by that department of her Majesty's Government forming the Board of Trade, to an interview on the subject of Agricultural Statistics, he had thought it to be his official duty as President, accompanied by the Secretary of the Society, who had been also summoned to attend such interview accordingly, for the purpose simply of receiving from the Board of Trade, and communicating to the Council, any request made to him on that important subject, leaving it to the Council to decide, whether the Society as a body, or only its members in their individual capacity, could consistently with its constitution take any distinct measure in promoting the collection of such statistical information.

The Council agreed that as such measures were not simply connected with the improvement of practical agriculture, but had a direct bearing on prospective legislation in Parliament, the Society could not by the following stringent condition of its charter entertain their discussion or promotion:—

"And know ye further, that in granting this our Royal Charter to the said Royal Agricultural Society of England, we do hereby declare it to be our full and entire will and pleasure that we extend our Royal protection to its national objects, under the condition that a principle of its constitution shall be the total exclusion of all questions at its meetings, or in its proceedings, of a political tendency, or having reference to measures pending, or to be brought forward, in either of our Houses of Parliament; which no resolution, bye-law, or other enactment of the said body politic and corporate, shall on any account or pretence whatever be at any time allowed to infringe."

COUNTRY MEETING OF 1854.—The Town Clerk of Lincoln attended the Council on the part of the Mayor and Corporation of that city, with a memorial and other documents connected with the Country Meeting of the Society to be held in 1854, at some place within the district comprised of the counties of Leicester, Lincoln, Nottingham, and Rutland.

The Earl of Yarborough transmitted a memorial on the part of the Lincolnshire Agricultural Society, of which his lordship is the President, in favour of the city of Lincoln as the place of such meeting.

These documents were referred to an Inspection Committee, consisting of Mr. Raymond Barker, Mr. Fisher Hobbs, Mr. Brandredth Gibbs, and Mr. Milward, with a request that they would pay a personal visit to the localities

proposed, and report at the next Monthly Council on their capabilities for the purposes of the Society.

A CORRESPONDENT writing to us from Newera Ellia, in the mountains of Ceylon, says:—

"I enclose a few seeds of a species of *Rubus*; found in the mountains of Ceylon, 6,000 feet above the level of the sea. The leaf is something like a Mulberry, and the fruit as large as the largest marble. I think in your hands it may be forced to twice the size, and prove a novelty. The plant is hardy, and the canes strong.

"We have twenty-two species of orchids at Newera Ellia, about half-a-dozen terrestrial, the others epiphytic. I have been much pleased with reading your Essays on Orchids, in THE COTTAGE GARDENER. The following are our Orchids:—*Terrestrial*.—*Calanthe* (two varieties, white and lilac), *Satyrion Nepaulensis*, *Cypripedium*, *Spiranthes*, *Anætochilus*, *Lyperus*, *Phajus* (very large species). *Epiphytic*.—1. *Dendrobium aureum pallidum*. 2. White variety. 3. White. 4. *Dendrobium formosum*. *Saccolabium*, pink variety; lilac variety; white variety. *Cymbidium*, and *Cœlogyne*. The *Satyrion* is strongly scented, and *Dendrobium aureum pallidum* the most beautiful; the *Saccolabium*, pink, very lovely."

THE amount of eggs imported into this country continues enormous; the number during the month ending on the 5th of March being 6,090,725.

THERE was a grand exhibition of flowers and plants held at Paris, on the 15th of March, for prizes offered by the *Seine Horticultural Society*. We shall only notice one or two features as grounds of comparison for our English readers. The best *Camellias* were Archduchess Augusta, Duchess of Northumberland, Madonii, Alba Carozettii, Marquis of Exeter, and Valtaveredo. Not only will it be seen that our English varieties were pre-eminent, but we were glad to observe English growers among the exhibitors, for Messrs. Standish and Noble sent an *Azalea Bealii*, which one of the French critics characterised as "magnifique." The *Roses* exhibited were Hybrids, Bourbons, and Tea-scented. Among them were La Reine, Vicomtesse Decazes, Souvenir de Malmaison, Duchesse de Montpensier, Baronne Hallez de Charapede, Souvenir d'un ami, and Louise Thenard; but the prize for the best rose was awarded to M. Fontaine's *Triomphe du comte de Montigo*.

WE have great pleasure in acquiescing in Mr. Beaton's request to allow him to express his gratitude to all those who have promised him their votes in favour of Amelia Parfitt, for election into the *Wanstead Orphan Asylum*. He adds, that:—"All subscribers have the privilege now to give as many votes for re-elections as they are entitled to give to new candidates for admission." The names of candidates for re-election, like that of Amelia Parfitt, are to be printed in red ink in the next polling papers, and all those who would assist him, were their votes not already engaged, may do so now, provided their votes have not been promised for any infant now in the Asylum, by giving him their red votes, or writing them after the name *Amelia Parfitt in the polling paper*."

PLANTING AN ORCHARD OR FRUIT GARDEN.

(Continued from page 20.)

WE may now suppose our plot complete as to the character of the soil, whether for a Fruit and Vegetable-garden, within walls or fencing, or for the mere Orchard, with, it may be, only a hedge around it. The walks, all but those which we will term marginal walks, have been considered, the walls built, copings provided, the soil trenched, the staple or texture of the soil improved, and water of a permanent character provided. The next questions will be—how to prepare for the reception of fruit-trees; and what situations to reserve for them? And here the subject assumes two distinct characters: the one, how to plant the Kitchen and Vegetable-garden, with walls or fences; the other, how to dispose of the trees in a mere Orchard.

It was stated at page 498, of our last volume, that five feet was the minimum degree of width for the chief walks, and this not alone because that width is absolutely necessary for walking in, but because what is termed "breathing-room" is necessary, or open spaces favourable, to a free circulation of air in hot weather: a liberal width of walk thus performs a double duty.

Now, it is a time-honoured practice to establish what I must term *marginal borders*, that is to say, borders on the opposite side of each walk to the wall-border. I see no reason whatever to depart from this practice, which has everything to recommend it. In the first place, it tends to throw open airy quarters for vegetables; the two are hereby as much detached as they can be. In the second place, a much readier access to the fruits is obtained by those who feel an interest in their names, habits, culture, &c.; and, added to this, the injury from birds is better avoided,—every one who paces the walks is an assistant in preventing their depredations; lastly, root-culture—a thing of so much importance, as will be subsequently shown—is unfettered by the proximity of vegetable culture. Another, and important fact must here be pointed to: if the walks are prepared as will be advised, the roots of the fruit-trees will find a safe asylum beneath them of much importance to aged fruit-trees and those of great bearing properties. All these points surely make out a case in favour of the marginal border. Such being admitted, I must deal with the subject of width both in the marginal and wall-borders. With regard to the latter, there are three ways of viewing the question, viz., as one of proportion; as adapted for a liberal supply of early vegetables; and, lastly,—which is the primary object,—as sufficient for the well-being of the trees. Few care about proportion, and, indeed, it should by no means be allowed to fetter the subject; yet, I think it will be found that a border about one-fourth wider than the wall is high will look better than one much wider or narrower.

As to vegetable-cropping, I neither dare advocate nor condemn it. In principle it is assuredly wrong, unless in very clever hands; and yet, it must be admitted, that a warm border is an exceedingly convenient place for dainty vegetables; and most gardeners, myself amongst the rest, are driven to this practice. I may, however, observe, that for my own part, I can contrive to crop my borders with little or no injury to the trees, and I shall accordingly show, in the proper place, what my practice has been in that respect.

As to the width essential to fruit-tree culture alone, it is much more moderate than people commonly imagine, especially if the trees are cultivated on a dwarfing system. As a rule seems requisite for the inexperienced, I would urge that five feet in width be considered the minimum point; this would, if the soil be good, furnish an eight feet wall, and that an extra foot of border be added for every foot in height of wall beyond this,

stopping at twelve feet of border, which would sustain trees of any dimensions. It will here be understood that we have now been treating of the border with regard to the fruit culture alone.

Now, the marginal borders will bear some relation to the wall borders on the opposite side of the walks; the latter, it will be remembered, were adverted to at page 498. These borders will have to contain trees of some eight feet in diameter, occasionally—even under a dwarfing system—and provision must be made accordingly for a proper extension of their branches. And then comes another consideration. Many persons possessing but small gardens, desire to have a few flowers on the margins of such borders, and I really see no reason to object to it, provided those who do so will take care that their floral pets do not injure the fruit-trees. In this case, it is not the exhaustion of the border that is to be feared, so much as the digging supposed to be necessary to flower culture. Now, digging must not be permitted where good tree culture is to be carried out; neither is it necessary for the flowers. We have a central walk here of this description, and it has had flowers of all kinds during the last twenty years, but it has never been dug, or if the spade has been used, it has only been about two inches in depth, and that more for the sake of surface-levelling. We introduce flowers by making special holes for them, taking care to have the patches far apart, and introducing the necessary compost with the trowel. If, then, flowers are to be provided for, we cannot think of borders much less than eight feet; more is needless; if no flowers or vegetable cropping, then a border of six or seven feet may be made to answer, but the proprietor must expect flourishing trees to overhang the walks in an inconvenient manner.

We must now contrive a back path for the sake of operations, and for what before was termed breathing room. We may meet with instances in which the owner, thinking to gain land for vegetable cropping, dispenses with this back path; but this is an erroneous view of the affair. There is no gain, but a positive loss; for by it there is ever an inducement to crop closer than circumstances can justify, and the consequences are immature vegetables, and injured fruit-trees.

Such being the case, let me advise a path or alley of two feet inside the border, and thus keep that busy implement, the spade, within lawful bounds. This alley will need no edging; it will be quite sufficient, each returning spring, before vegetable cropping, to mark it out anew, so as to sustain the bounds. Some choose to put edgings of Parsley and other herbs, Strawberries, &c.; nothing but sheer necessity can justify this, for such practice involves the use of the spade as a preparer, and thus the valuable surface-roots which ought to invest beneath the path are destroyed, and one of the uses of the path nullified. And here, before concluding this portion of our subject, let me point to the fact, that a good cultivator will so contrive to make his walks near fruit-trees as to afford every facility for the roots obtaining a secure retreat from the spade, and thus promote genuine economy, by turning every portion of the surface to account. As to modes of preparation, nothing more is needed than, before adding the gravel, or whatever else the walks are cased with, to secure a healthful soil beneath; any ordinary sound garden soil will do; and as to the dryness of the future walk, that will, of course, be secured by the original drainage, and by making due provision for carrying the surface waters away.

One thing yet remains to be settled as to the Kitchen-garden, before proceeding to the Orchard, namely, what *edging* to give the principal walks. In former days, there was scarcely more than one idea on this head: *Box* was the material, whether in large gardens or small. In the

extensive gardens of Mr. Rucker, at Melrose Hall, near Wandsworth, some forty years since, the kitchen-gardens were edged with *bricks* set on end: these had an untidy and meagre appearance, and were quite unworthy the style of the grounds. *Stone edgings*, with an architectural moulding, are excellent, but they are very expensive. We have, however, in these days, *tiles* of various descriptions, which are very handy and neat affairs, and, for a small garden, at least, undeniable. We have used them to a considerable extent during the last sixteen years, and they were obtained from Hayward's Tileries, Burslem, Staffordshire; they are now, doubtless, in many hands. They are a foot long, by six inches deep, four of which are buried to keep them steady; and they possess a nice moulding on the upper edge. These never break with frost, and are, by far, too impervious to favour the growth of moss.

I may here remark, that if the proprietor of the fruit and vegetable-garden fears not expense, and is desirous of showing what the art of gardening can do, he may establish *wire trellises* on all the marginal borders, in which case the garden may be made as prim as a map, and the marginal borders may be made much narrower, and, of course, more convenient. The Royal Gardens, at Frogmore, exhibit a character of this kind; and many more kinds of trellises are, or may be adopted, about which we shall say more in due course.

The training of wall-trees is a matter worthy of consideration by those forming new gardens. It is well-known that the old plan of nailing is beset with evils. The continual expense of nails, the slowness of the process, and the wear of the wall through an annual repetition, all conspire to hold it forth as a practice unworthy of the age. Yet it must be admitted that nailing is more protective to the blossom than tying on a detached trellis; for who has not observed young Apricots or Peaches "swelling-off" close to the wall, when those projecting have been destroyed? This is a great fact; and before nailing is utterly given up, an equivalent in this respect should be obtained. The same advantage, also, is connected with the ripening of the fruit and wood in autumn. Horizontal wires, strained through fixed studs in the wall, have been in vogue some time, and on south aspects, at least, there can be little doubt of their success. How far they may succeed on cooler aspects, in our northern counties, is a matter about which some little doubt remains. To be sure, a systematic mode of protection will obviate the evil, but, I fear, not every one can surround their garden with conservative walls. As, however, in the course of these papers, it will be necessary to discuss this division of fruit-culture, I will endeavour to show what is practicable in that way. Those who are about to adopt the system of training on parallel wires must see to the fixing of studs at proper distances. The wires may be horizontal, and from six to eight inches apart: it is not well to have them closer, as shoots getting behind through neglect are sometimes difficult to get back. Probably, about one-and-a-half inch from the wall will be found a proper distance.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.—5TH APRIL.

ANOTHER very crowded meeting, a room full of plants, and fruit, and flowers, and a Scotch mist hanging over London at noon, which drove me for shelter into Covent Garden, and to Mr. Stephens's great sale-room, where, of all the noises in this turbulent world, I found this room the most full of noise, for the noise-makers were regularly packed up to the very ceiling. One set of cocks crowing at the full stretch of their lungs,

"Cock-a-leary-doo;" while the next as resolutely held forth, "Cock-a-leary-de'nt." I followed the latter advice, and did not buy, but was off to the Horticultural, to see the things before the meeting. New orchids, new fruit, new Geraniums, new ways of keeping fruit in bottles without sugar, and new receipts for doing so—one from a cook, and one from a butler—not unequally matched, certainly. A new and most beautiful way of making skeletons—I mean natural skeletons—of leaves, flowers, and the coverings or seed-pods of many kinds of plants, with other new and old things, of which we shall hear more particularly as we go on.

On entering the room, the first plants that met the eye were new *forcing Geraniums*, high-coloured ones, which were sent by Mr. Gill, a florist at Bayswater, the raiser of the *Queen of February*, which I described in the report of the last meeting, when I complained of not having had its history. There were several plants of it here to day, and this history was now supplied.

The *Queen of February* is to be "sent out," and it is a regular forcing variety. It was forced this winter in a temperature of from 50° to 75°, and on the 26th of February, flowers were cut from one of the plants now exhibited, showing that it keeps in bloom at this season more than six weeks, as there are several flowers yet to open on it. All this we ought to have known when we first heard of it. The other seedling is called *Wellington*, and without pretending to a deep knowledge as to how the strains run in this race of Geraniums, I should say at once that this was a seedling from the *Queen of Roses* by the pollen of a high-coloured variety; the habit and the leaf of the *Queen* are manifest, and the father has improved the colour, therefore, this will prove a very strong and useful kind. Another forcing Geranium I must strongly recommend to everyone who takes an interest in this class, and to country gardeners in particular, for Covent Garden market is now in a blaze with it, in bouquets, in large bunches of cut-flowers, and in pot-plants; this is no other than *Gamlet*. It comes near the colour of *Rising Sun*, and is among the best, if not the very best, of all the forcers. *Alba multiflora* does not seem to be a great favourite in this market.

The next plants in succession were a large collection of the very best *Hyacinths* for flowering in pots, and they were certainly very finely-bloomed by the Messrs. Henderson, of the Pine-Apple Place Nursery. They are in the habit of treating us every spring with a like display, and on this occasion the lecturer had little need to draw the attention of the ladies particularly to this group, for they crowded round them like bees, and were as busy as bees taking down the names. I took the names last year, and the best of them I told of at the time. *Prince Albert* is still the best dark. The best scarlets are *Fire Ball*, and *Sir Charles Napier*, so famous for firing balls and bullets. The best blues were *Laurens Koster*, *Barron Von Thull*, *Prince of Sax Weimer*, *Keizer Ferdinand*, *Morant*, and *Richard Cœur de Lion*. Of salmon-colour, perhaps *Maria Theresa*, and *Sultan's Favorite*, were as good as any; but, like the blues, this and the next section are a numerous class, and individual taste in shades of colour is of very little use. In flesh-colour, *Lord Wellington*, *Prince of Wales*, *Lord Grey*, and *Tubiflora*, are as good as any. *Meruelle* and *Virgo*, were the best blush, and *Prince of Waterloo* the best white. I shall not vouch for all these names being rightly spelt, for I never studied the heavy Dutch.

In going round the room, a collection of plants from the garden of the Society comes next, and here I must pause to make a remark or two. These meetings are composed of Fellows of the Society, and practical men, who bring up garden products for competition. It is thought not essential to explain to practicals what they

see right before; and it would be thought a kind of boasting to praise up the plants of the Society, as if judges were allowed to judge their own plants or fowls. Now, I have been a judge on plants for as many years as I have fingers and toes; I have been an exhibitor too, and won laurels, both in this very room and in the garden of the Society. I have also called in as a loungee to see the lions of the day, and I have been an earnest reporter. I know the stimulating effects of public praise, and the value of adverse criticism when rightly applied; and I know how to be abused as well as any man who ever planted a cabbage; and yet I do not know how *we* should be so sensitive about our own merits as not to praise *our own* plants, as much as they deserve to be praised, as well as those of other people, whom we stimulate to exertion by our example and our awards. It is on this principle I report on the "plants sent from the garden of the Society," of which scarcely a notice is taken by the lecturer, because he thinks it of too delicate a nature to do so, which I do not, and I am quite sure it would not be received in that light by the Fellows of the Society; of this we had a good proof at this meeting, in that part of the lecture which referred to a *Forsythia viridissima*, which was sent by somebody who grew it "somehow," or let it grow as it could in this climate. Now this *Forsythia*, like the Jasmine called *nudiflora*, and the *Camellia*, all from China, are perfectly hardy in England as far as the plants are concerned, but coming so early into flower, our climate is too cold and damp for their flowers, and unless we guard them from the cold and damp we can never have their flowers in perfection. Hence it is, that in the garden of the Society, *Forsythia* being as much protected while it is in blossom as if it were a *Camellia*, their plant of it is brought up year by year in better condition and bloom than from any other quarter whatever; and I have no doubt but many of the Fellows went away pleased with the hint, and hoping to profit by it. This would be a good time to pot a pair or two of good-sized plants of it, and all the care they would need would be to plunge the pots in a border near the pump; to keep them *constantly* moist at the roots from May to September; to take them up next Christmas, and get them under protection for a while, and almost any place would do, as then, they having no leaves, very little light will bring them into bloom, or they might be slightly forced, and as soon as the first flowers begin to open, a staircase, a lobby, a front hall, or a show-room, is warm enough for them, and they would keep longer in flower in any of such places than in a warm comfortable conservatory. The very self-same kind of treatment will suit the old *Coronilla glauca* better than any other way. A plant of it, a yard in diameter, has been in flower all this winter, and I saw it in bloom last February, out in the open bed, with Mr. Sturgeon, when I went down to get into the fashion about the new fowls, and he told me it stood there for the last four or five years without any protection whatever. Therefore, I hold that it is right and proper to point out, at these meetings, every mode by which such and such plants are managed and brought forward in our own garden.

Another variety of *Rhododendron ciliare* was on the table from the Society's collection, with *Habrothammus elegans* in excellent condition; and, as far as I could see, this is the way it was treated. After flowering, towards the end of April they cut it down close—that is, close to the old wood; and, having begun on that system, the old wood is very low and near the pot. Before the end of May the plant was repotted, after shaking off the soil; and towards the end of June it was in the open air, or in some cold pit, where the lights were kept off at night, and from the end of September it was kept rather dry to Christmas, when the flower-buds showed. From that time they began to water it

more freely, and now it is more beautiful than *fascicularis* will be next May in the large conservatory; but that house disagrees entirely with it, or else the plant is some third-rate seedling from *fascicularis*, which is the more likely. *H. elegans* is just the same way in many country places; but the Society have the best variety of *elegans*, and a very bad variety of *fascicularis*.

Henfreyia scandens, a stove climber with white flowers, larger, but in the way of *Stephanotis*, was in good bloom and leaf, trained in a pot. The old *Gesnera Douglassii*, a scarce plant now, *Heaths*, *Epacris*, *Azaleas*, *Cytisus ramosus*, *Muraltia stipularis*, *Correa Goodii*, *Begonia hydrocotilifolia*, and the seedling between it and *manicata*, a large red *Camellia*, *Diosma capitata*, all very useful for this season; and the following, which were exhibited at the March meeting—*Acacia celsatrifolia*, as good as ever; *Polygala Dalmatiana*, equally good; *Diosma ambigua*, *Trymalium odoratissima*, both good, and *Ceanothus rigidus*, of which it was said in the lecture that it is perfectly hardy, but that *dentatus* is grown in some collections under the name of *rigidus*, and that it was much pinched by the late frosts.

Mr. Gaines, of Battersea, sent two large handsome specimens of *Rogiera thrysiflora* as full of blossoms as they could carry, and, at a distance, they looked like the flowers of a common Valerian. What a chance for gardeners who have to keep up a bloom in winter, to get in, almost at once, so many good things as this genus presents. Mr. Gaines also sent pretty white and blush-flowering *Hybrid Rhododendrons*, gaily spotted, named *maculata*, *elegans*, and *insigne*; also a pretty *Cineraria*, with a white centre, and rich purple border; he calls it *Reine des Fleurs*—"Polly-put-the-Kettle-on" would have been a far better name. Everybody but a florist abominates and despises such Tom-foeries as giving silly French names to English seedlings. For the sake of honesty and dishonesty, a better plan would be to keep the French names only for such plants as are sent to the continent, and giving the English equivalent or translation to those sold here. Instances of the kind are known to have been done, and there is nothing new in the advice. The Messrs. Henderson sent a large white-spotted *Rhododendron* seedling, called *Campanulatum superbum*, a very good sort, under a very bad name, as no traces of the real campanulate *Rhododendron* is seen in this. In respect to many seedling plants, the question, "What is in a name?" might be thus answered—a fortune, or a false character. A good *Cineraria*, white centre, and lilacy-purple edge, was sent by Mr. Mitchell, of Brighton.

There were three perfectly new *Orchids*, and two of which were perfectly handsome—*Arpophyllum giganteum* and *Dendrobium onosmum*; the third is a *Lalia*, a strong-growing one, with large flowers. It was said either to be one called *grandis*, or nearly related to it. The sepals spread out wide open; they are long and wavy, and of a cinnamon colour all over, and the lip is large, of a blush colour, and feathered from the bottom with pink lines. I did not hear where it is a native of, probably from the Brazils. *Arpophyllum giganteum* is a Guatemala plant, introduced by Mr. Skinner, and distributed by Mr. Stevens's hammer. At the time of the sale, plants of it were sold under two names, *squarrosus* being the second, because it was thought the plants corresponded with dry specimens of two kinds; and there is a third kind known by dried specimens, but *giganteum* is by far the best of the three, and those who bought it under the name *squarrosus* ought to remember this, as they have a much more valuable plant, and a better-looking flower—all which was explained to the meeting. The third species is a very dwarf plant, and, probably, not much to look at. Mrs. Lawrence shewed one of it with four spikes of bloom; and Mr. Carsen, gardener to W. F. Farmer,

Esq., sent another with three rows; and at the meeting I heard of it being in fine bloom in two other places near London; so that it seems easy enough to manage, and it soon makes a large, bold-growing plant, with long strap-shaped leaves, looking like some *Cymbidium*. The flowers come in a very close round spike, on a long stalk standing as upright as a ramrod, with nine or ten inches of the top as closely set with flowers as they can stand. The colour is bright purple. One of these pretty spikes will keep a month or five weeks, at this season, in a glass of water, in a warm room; and few orchids do more. The third, *Dendrobium onosmum*, is a much improved form of *D. macrophyllum*, as much so as *Blandyanum* is on *nobile*. *D. macrophyllum* itself is the one that smells so much like Rhubarb, but so faint, that I thought it quite fragrant. Mrs. Lawrence sent a specimen of it in the true Lawrenceian style—large, robust, good-looking, and magnificently in bloom; but let me give an idea of it. Everybody knows *Dendrobium nobile*; well, the shoots of the rhubarb-scented *Dendrobe* are as strong as those of *nobile*, much like them, and also, like them, flower without the leaves; but they spread out wide from the pot, and then hang down, and are from three to four feet long, the last eighteen inches of which are covered with large, handsome, purple flowers. There were fifteen spikes, or shoots of bloom, on this plant, and the average number of blossoms on each shoot was fourteen. There were three fine large plants of *Vanda*—two of *suavis* and one of *tricolor*. These two kinds have been grown under one name, but the truth is out now all round London, and *tricolor* runs into as many distinct varieties as the *Calceolarias*; and I was told of nine forms of it that are proved. *Dendrobium pulchellum*, in a wide flat basket, was very thick of bloom, looking as comfortable as the Queen of the Fairies on a bed of down; also *Dendrobium densiflorum*, as rich and yellow as ever, with a huge plant of *Chysis bractescens*, crowded with large white blossoms in six distinct bunches or nosegays; and the lecturer told us, on his own authority, that of all the flowers, this is the best for ladies hair in a ball-room; that he himself had known one of these snow-white flowers to last out three nights running in a ball-room, and not the worse either. It is of no use, therefore, railing at me in future for writing about wreaths, nosegays, and hair flowers, when I can show that a philosopher of our own country and times, a man of my own age, has not only been to balls lately, "three nights running," but took particular notice to see which flowers suit best, and is not ashamed to tell the tale of his observation before mothers, aunts, and daughters, among our high aristocracy.

Roses come in very naturally after dancing philosophers; and we had two large boxes of cut-flowers of them on the table, chiefly *Hybrid Perpetuals*, and *Tea-scented* ones, that are very well known. Mrs. Siddons, a tea fawn-coloured one, was very fine; also *Viscountess la Cazes*, one of the best yellow Tea Roses. *Soliel de Austerlitz* does not seem to like forcing; although large and well-coloured, the shape was entirely gone. *General de Brea* was of fine shape and good colour. *Duchess of Sutherland*, *Barron Prevost*, and *Madame Trideaux*, the same. *Louise Peronnez* was not much behind them; and *Geant des Batailles* was as rich and fine as if it were the height of summer.

Mr. Ingram, of the Royal Gardens, Windsor, sent a fine dish of forced *Strawberries*, one called *Prince of Wales*. It is one of Mr. Ingram's Seedlings, and he says it forces as well as Keen's Seedling, and is of much better flavour. The forced fruit had a peculiar appearance, and it was stated that such was always the case when forced. Another peculiarity of this Strawberry is, that it will produce a second crop in the autumn if the first and second blossoms are cut off, and that the fruit in the autumn lost the curious appearance. It is a

seedling from the British Queen Strawberry. There was also a dish of the *Black Prince* Strawberry, as fine as ever, and as highly spoken of in the lecture as it deserves, but, like the British Queen, I know it refuses to do well on some land.

The *bottled fruit* was a new feature at these meetings, but a very useful one, nevertheless. It was only the other day that I tasted Scotch Marmalade, from a receipt in THE COTTAGE GARDENER, the very best and richest I ever tasted. Some of the fruit in these bottles looked as well as could be, and I have no doubt the receipts for bottling will be found useful.* The next move must be for the *best cooked vegetables*; but who shall be the judges, and where are the dishes to be exhibited? for I protest against their being sent to our rooms without hot joints. There was a dish of foreign *Peas*, from Mr. Solomons, of Covent Garden, to show the state of that article at present in the market, and some large heads of *white Brocoli*, from Mr. Bates, Manor House, Molesey, Surrey, finer and better than any that were in Covent Garden for months past.

The *skeleton flowers, fruit, and leaves*, were sent by a lady who did not wish her name to be mentioned. They were much admired, and a specimen of the best skeleton leaves done in India were shown at the same time, but not so well executed as those now exhibited; the wonderful structure of the network of a flower was never better seen before, all the soft parts were entirely gone, and the veins or ribs were blanched, and holding the forms together as perfectly as when the frame was united by the vegetable matter. D. BEATON.

NEGLECTED GREENHOUSE.

"SUCH a house has as well as been made over to me. I am to have anything done that does not involve much expense. I have cleaned it out, potted the plants afresh, which are very small, consisting of Geraniums, Calceolarias, Verbenas, a few Fuchsias, and several sickly Cactuses; there is nothing in flower, and Papa will not allow me to purchase any thing in bud: but says I should sow some seeds that would look nice during the summer. What am I to do to make a show? You will perceive that I cannot yet profit by the details given of many greenhouse plants. I want to know all about the simple and the economical to begin with." The above is part of a nice letter into which I was privileged to have a peep last week. I thoroughly sympathise with the go-ahead, stick-not-at-difficulties spirit which it evinces. It seems to require a more detailed notice than can be supplied in a correspondent's column, just because there are numbers of young ladies in a similar position. One source of pure pleasure to me, was the ability at times to assist such inquirers by something more than words. Far from damping our friend's wish to have the greenhouse showy in summer, we would urge the propriety of making it especially attractive in winter and spring. To do this, besides sowing a few seeds, she must contrive to get a few plants,—not in bud, but young, such as may be grown on,—and a few bulbs, if possible; and failing one or both of these, to try and get a few slips of different things from her neighbours. Let her only show she is interested in the matter, and there will be no

difficulty. All real lovers of gardening are united by a sympathetic, philanthropic tie, which draws them more closely together than the mysteries of any other brotherhood or craft. I have known gardeners entering upon situations where not a flowering plant in a pot was to be seen, and if they had waited until they could have given an order to a nurseryman, not a flower, in all probability, would have been there to this day. But a slip was got here, and a cutting there, and some rather common things were grown in such a superior manner, that a new taste was created in the minds of employers that *must* be gratified, and pits were reared, and conservatories built, and grounds laid out for ornament, and money cheerfully spent in their keeping, the very thought of which, at one time, would have been as alarming as a night-mare vision, and all, in general, thus resulting in the pleasure and benefit alike of proprietor, gardener, and nurseryman.

Let our young friend imitate such examples; never be deterred by difficulties; never lose patience, attention, perseverance, and hope; but make the most of circumstances, and, although not a betting man, I would pledge one of my best plants, that before a second Christmas, Papa, notwithstanding the demands upon his resources at that season, would have set aside a small sum for the ornamenting of the greenhouse, as a token of his approval of past exertions, and an encouragement to progression in the future.

To ensure this success, allow me to give a few practical hints. Full details in most cases will be found by examining the index of the volumes you possess. Banish from your mind the idea, that the statements made which you consider applicable to gardeners are not equally suitable for you. Every tribe of plants you mention has been treated in great detail, and if you would excel, you must attend to the *very minutiae*. It does seem irksome at first to be so very particular with everything, but if you begin systematically, you will find you will easily be able to arrange plants requiring similar treatment into groups. Order and system will thus soon become more natural than unmeaning confusion. One sound idea thus not only reasoned upon, but developed in action, will give you more knowledge of a subject than reading volumes of practical directions, without inciting the mind to enquire as to the *why* and the *how*. For instance, in such a house as yours, about this time last year, I saw *Epacris*, *Calceolaria*, *Cineraria*, all mingled together. The *Epacris* had been pruned-in after blooming, and the owner had been told, quite correctly, that they should be kept rather close until they broke afresh; but this closeness covered the *Calceolarias* with fat giant fellows of green fly, while the simple precaution of placing the plants he wished to grow freely at one end of the house, and keeping them closer and warmer, and the *Calceolarias* where air could play freely among them, at the other end, would have suited the plants, and, besides securing health, saved some expense for tobacco.

Another general hint, as you have a vine, is to make up your mind whether the vine or the plants is to be the chief consideration. With the exception of the Cactus, many people would plant the most of the things you mention out-of-doors, and thus you might grow fine grapes by using your house chiefly for preserving plants in winter. We shall shortly show how both first-rate vines and plants, too, can be grown in the same house by selecting the plants. But if you wish the house to be gay all the year round from kindred plants to those you mention, you may get fair grapes, but you cannot make them an *especial* consideration, because hardy greenhouse plants will require more air than would suit the vine. In fact, in an ordinary cool greenhouse, the vine, south of London, would scarcely be so well off as against a south wall out-of-doors.

* The best collection of fruit preserved without sugar or vinegar was from Mr. Lovejoy, butler to J. Thorne, Esq., South Lambeth. They were Damsons, Greengages, Gooseberries, Rhubarb, Cherries, Black and Red Currants, Raspberries, and Mulberries. The process of preserving was this:—"When the stalks were removed they were bottled, and boiling water added, having alum in it in the proportion of one drachm to four gallons. They were then allowed to become cold, and then the bottles were filled and bunged down tight. They were then placed in a copper of cold water and heated to 176°. After that a piece of bladder was tied over the mouth of each bottle, and they were securely sealed." —*Gardeners' Chronicle*.

To prevent misapprehension, I consider it also necessary to state, that what follows is based upon the supposition that you have no garden structure besides this Greenhouse, though some glasses, and even a turf or earth-pit, would be useful; and that, with the exception of a few seeds, and a few cuttings you may obtain, your whole dependence is upon the plants you already possess. Let us glance, then, first, at a few of the principles to be kept in view in the management of such a house.

Temperature and Air.—In winter, the average night temperature should be 45°, allowing it to fall to 40° in extreme cold weather, rather than have strong fires. Air must be given with great caution in stormy, frosty, and foggy weather, and that little at the top of the house. At this season, fire will be seldom or never required, and air may be given in the morning and removed in the evening. By the middle of next month, unless in stormy weather, have air on all night. From June to the end of September, it will scarcely be possible to have too much of it. From November to April, it will be advisable, while you are absent during the day, to initiate some one to attend to air. When the sun shines in mild weather, give air as the heat approaches 50°. In a frosty day, with a bright sun, give air with more caution; from 10° to 20° rise from sun-heat will do the plants good. To lessen evaporation in such circumstances, sprinkle the paths and shelves with water. In continued dull weather, with the outside temperature ranging about 40°, put on a small brisk fire in the morning, that you may change the atmosphere of the house by mid-day.

Shading.—The vine will help you in this; but in the heat of summer a little Nottingham netting may be useful for blunting the force of the sun's rays, or a little whitening may be put on the glass, or a little double size melted and brushed on the glass when hot; it will then resemble rough plate.

Soil.—Gritty matter collected from the road-side will grow all the plants you are likely to try. As you have a kitchen garden you may get a supply even nearer home. Some of the ground will be ridged up or rough dug during the winter. After a dry sunny day the surface will be mellow and flaky, and this, scraped off and housed in an airy place, is a greater treasure to the pot gardener than ambrosia was to the deities of old. With the addition of a little sharp sand, and a little dung very rotten, or decayed leaves, this homely earth will grow anything not requiring heath mould.

R. FISII.

(To be continued.)

THE PELARGONIUM.

(Continued from page 10.)

FANCY VARIETIES.—It is somewhat difficult to define this class of Pelargoniums, because they approach so near to the class Show Varieties. Every cultivator that grows both classes carries in his mind a sufficiently distinct idea of each. The distinctive name, *Show Varieties*, is as bad as need be, and as hard to be understood by the uninitiated as Greek or Hebrew, and *Fancy Varieties* are equally difficult to be comprehended, for both are show varieties, or, in other words, plants for exhibition; and both are fancy varieties, that is, the properties are such as the fancy or taste of the florist has laid down;—rules, founded upon the form, colour, and substance, any variety in either class may assume when they bloom. I have felt these misnomers in the names of the two classes for some time, and, no doubt, many of the amateur readers of THE COTTAGE GARDENER have felt the same. As a writer on the florists' varieties of the Pelargonium, I should be glad to hit upon two names for these classes sufficiently distinct so that a broad line could be drawn between them. I think that

large-flowered show Pelargoniums, and *small-flowered show Pelargoniums* would be more expressive, and certainly a more true description or distinction between the two than the present names. The question has often been put to me, "What is a Fancy Geranium?" and the only answer I could give was, that it is, generally speaking, a smaller and more numerous flowered variety than such as *Salamander*, *Conspicuum*, or, *Virgin Queen*. Also, that the foliage is smaller, and the plants less robust in growth, with the colours not so distinctly defined as in the show varieties, though the latter property is becoming more distinct on account of the newer improved kinds having the lines separating the colours better defined. I do not know I can add anything, or point to more, even now, by which to describe a fancy variety. I should be greatly obliged if any of our readers, whether professional or not, would give new and better names to these two classes than they at present are known by. The Fancy Geraniums always attract the *ladies*, and are more valued by them than by gentlemen amateurs.

Agreeable to promise, I subjoin a very select list, and sufficiently distinct to warrant any amateur desirous of growing these really beautiful flowers to choose any number from he may wish to purchase:

Alboni (Henderson), upper petals rosy-purple; lower petals blush white, sometimes blotched.

Alboni superba (Ayres), upper petals rich rosy-crimson margined with white; lower petals white, faintly streaked with crimson.

Anais (Chauviere), ground-colour bright shining rose, shaded at the edges with white; a very free bloomer.

Beauty (Henderson), upper petals bright crimson, margined with white; lower petals white, margined with deep maroon.

Beauty of St. John's Wood (Henderson), upper petals bright rose carmine, with clear white margin; a regular belt of carmine round the lower petals; very distinct.

Beauté (Belleperchis), upper petals rich mulberry, edged with white; lower petals spotted with mulberry; very fine, and a free bloomer.

Belle Marie (Ambrose), top petals rich mulberry, margined with crimson; lower petals blush, with dark spot.

Bouquet tout fait (Chauviere), upper petals dark, margined with white; lower petals white, spotted with maroon.

Caliban (Ayres), upper petals rich plum colour, edged slightly with white; lower petals white, spotted and clouded with maroon; good form and substance.

Circularity (Gaines), dark crimson, with a belt of fine clear white round every petal; extra fine.

Defiance (Ambrose), very dark maroon; petals margined with white; centre pure white; flowers large and well-formed.

Exquisite (Henderson), upper petals clear lilac, with a broad belt of bright rose; lower petals clear rose, spotted; a compact trusser, and good habit.

Formosissima (Ayres), upper petals rich crimson, shaded with rose, with a broad margin of white; lower petals white, margined with crimson; very distinct and fine.

Gaiety (Ambrose), fine mulberry blotch, with pink margin; lower petals white, spotted with the same ground colour; a gay, lively flower.

Hero of Surrey (Gaines), upper petals nearly black, belted with pure white; lower petals white, with a carmine spot on each; a distinct, beautiful variety.

Madame Rosalie (Gaines), clear shining rose and white; a large flower, and very beautiful.

Marion (Henderson), crimson ground; white margin; a fine variety, lasting a long time in bloom.

Miranda (Ayres), ground-colour delicate salmon, pencilled with white; a novel colour, and very beautiful.

Modesta (Ambrose), upper petals pale pink; lower petals clear white; very distinct, showy, and good.

Orestes (Gaines), bright rosy pink; light blush margin; white centre; distinct.

Othello (Henderson), upper petals dark rich maroon, with an even light margin; under petals pale blush, with a distinct belt in the centre of each; form good.

Pictenata (Ambrose), upper petals rosy carmine; lower petals distinctly spotted with cherry colour; form good.

Queen Superb (Ambrose), large blush white, with bright pink blotch on the upper petals; a free bloomer.

Reine des Fleurs (Henderson), upper petals violet plum, broadly margined with white, slightly marked with rosy purple.

Richard Cobden (Ambrose), upper petals rich dark velvet, with a clear margin of white; lower petals rich crimson, with a large white centre; a fine-formed flower, of good habit.

Roland Cashel (Gaines), upper petals pure white, with a large crimson spot in the centre; lower petals the same; a very fine distinct variety.

Sambo (Ayres), rich purplish crimson; upper petals nearly black; very fine.

Superba (Ambrose), dark crimson upper petals, edged with pink; lower petals blush, with dark markings; very fine.

Unique (Gaines) colour lake, edged with white; novel and good.

Velutinum elegans (Chauviere), dark velvety maroon, with veins of white; beautiful form and habit; extra fine.

T. APPLEBY.

LYCOPODIUMS.

(Continued from page 321, vol. ix.)

A CORRESPONDENT has reminded me that I have not finished this subject, which is quite true, and the reason is, there are several species in our stoves that are not yet either named or described. I have waited for them to be named by some botanist who takes a delight in these really pretty plants, but in vain. As far as I am aware, no names have as yet been given to them, and in my present position I have not the means either of growing or studying them. Perhaps, when I have put my out-doors subjects into order, and have put up more glass, I may be able to cultivate them and my favourite orchids once more; and then I hope to be able to give a better account of Lycopodiums. A collector of orchids, who has travelled in various localities where these lively green and shaded purple-leaved plants grow, informed me that the species are very numerous, and if there was any demand for them they might be collected in great numbers. Another correspondent wishes for information how to grow them in pots; and another desires to know how they may be cultivated in Wardian cases. I have great pleasure in answering these queries; and as the replies would occupy too much space under the head "Answers to Correspondents," I shall throw my remarks together, in this place, commencing first, with their culture in pots.

Propagation: by cuttings.—All the late growing species may be easily propagated by cuttings. The greater part of them, if grown in a moist heat, push out roots all the way up the stems or branches. When it is desired to put in cuttings (the spring is the best time), prepare some small pots, such as those known by the name of *thumbs*, fill them nearly full of the compost I shall by-and-by describe, and upon that place a layer of silver sand, then take off a cutting about an inch or two long, furnished with a root made in the air, make a hole in the centre of the pot with a rather thick stick suddenly sharpened to a point, place the cutting in it immediately it is cut

off, for the tender root will not bear the least time exposed to the air after it is cut off from the plant, therefore, it is desirable only to take off one at a time. As soon as it is planted, give as much water as will level up the hole in the sand. It is the property of sand, when it is watered, to run level, if the vessel containing it stands level. Every propagator knows this, and waters his cuttings of every kind for that purpose, as well as for moistening it. Having finished the first cutting, proceed so with the next, and so on till all are planted. Then place them under a tight-fitting hand-light set upon a heated surface of sand or coal-ashes;—or they will strike fresh roots freely in a common hotbed. In either case, they will require shading from the sun for a fortnight or three weeks, after which they may be gradually inured to bear the full light and air. As soon as that is the case, give them a shift unto $3\frac{1}{2}$ -inch pots, and place them in a shady part of the stove to be subjected to the ordinary treatment.

By Division.—The greater number of Lycopods may be increased by this method, and larger plants obtained at once and in a shorter time. The method of doing it may be exemplified in *L. apodum*, one of the prettiest in the genus. This and similar plants or varieties push out, when growing, almost as many roots as leaves, and all they require is to take a largish plant, turn it out of the pot, and with the fingers gently separate it into separate pieces about the size of half-a-crown. Put these singly into suitably sized pots, and place them in a similar situation as mentioned above for the cuttings. A week or ten days will be quite sufficient length of time to establish them as plants, after which they should be removed into the stove, and treated as plants that have not been divided. The following may be increased by division:—*L. apodum*, *L. apothecium*, *L. circinatum*, *L. cordatum*, *L. casium*, *L. denticulum*, *L. lepidophyllum*, *L. stoloniferum*, and *L. umbrosum*, besides some unnamed ones. The others require to be propagated by cuttings.

SUMMER TREATMENT.—Soil.—The roots of Lycopods are long and wiry, breaking out at the ends into bunches of fine fibres; hence, it is necessary to have a light, open compost to grow them in. To form this the following are necessary:—Very fibry loam, that is, turf with the roots of grasses in it undecomposed, very fibry peat, half-decayed tree leaves, and chopped moss, either green or white, though I prefer the latter where it can be had. Equal parts of all these, mixed together in a half-dry state, make a light, open medium in which the roots will travel with ease, and find nutriment for the plants. All of them are not indispensable, for these plants will grow in anything that water will pass through. I have grown them in nothing but moss itself; but in that, though they did well enough for a time, yet, when the light of long days acted upon them, they began to turn yellow at the lower parts of the branches, and finally became so unsightly that I was obliged to throw them away. I have grown them also in sandy loam, but this I found to be too close, and the plants did not grow satisfactorily in it alone. Moss, I consider, should, in all cases, be mixed with the soil; there is a lightness and buoyancy in it that prevents the soil becoming too close, and it decomposes so slowly that the soil remains open and permeable to the roots for a long time, to say nothing of its fertilizing properties, as it slowly yields them. The moss should be finely chopped and put through a fine-meshed sieve. It then readily mixes with the loam, peat, and leaves. To this compost add a liberal allowance of sand: the silver is the best, but the common river sand will answer very well. If all the materials of this compost be mixed together thoroughly at the time of potting, it will be advisable to pass it through a very coarse sieve, which

renders it more workable, and diffuses the ingredients more thoroughly together. For very young, small plants, such as newly-struck cuttings, or for small divisions, the compost will be better for use if it runs through a finer sieve, using the rougher parts that will not pass through as drainage upon the crocks or broken potsherds. This finer compost will be proper to put in under the sand in the cutting pots.

T. APPLEBY.

LETTUCE CULTURE.

ALTHOUGH this production is from a climate similar to that from whence so many of our greenhouse plants are natives of, yet it is able, at a certain state of its growth, to endure as much cold as some plants that are the progeny of parents indigenous with us, but the latter, partaking more of the perennial character than the Lettuce, are, in common with many other plants of a like kind, less able to bear the rigours of winter than the purely "annuals;" and this rule is, in some degree, exemplified in the Lettuce, which, at a certain age, say when it has attained about half its growth, is really more hardy than either before or after; and though very small plants will sometimes stand over winter, yet they are subject to so many other mishaps that, in many cases, they are humoured with a glass, or other protection, until such time as the season moderates, so as to allow their being planted out, which, however, must be done with caution: for, besides the evils resulting from frost and cold, a scarcely less evil arises from slugs and other enemies preying on the young plants to a woful extent.

This important family delights in a rich soil, and in summer it may have a good share of moisture naturally, or applied artificially; while in autumn and winter, a drier and more sheltered situation suits it best, because, in such soils, plants generally live the winter with less damage to themselves than in one of the rich compound which is reserved for their summer habitation, and in which the inducement to arrive at a premature growth exists to a much greater extent. There are many plants in which the principle of "flowering early" might be regarded as a great acquisition; still, there are others, and this is one of them, where as large a growth of the vegetable as is possible to obtain ought to take place before this flowering propensity comes on; and, as this object is best accomplished by an abundant supply of suitable food, it behoves the skilful cultivator to furnish it with that food at such time and in such quantities as meets its wants, and otherwise prevents its prematurely running to bloom, and, consequently, to seed. For this purpose, the ground selected for the summer supply ought to be rich, moist, and deep; and, although some cultivators have recommended a partial shade from the mid-day sun, we do not think this absolutely requisite; on the contrary, where the ground is cool and moist, without at the same time being stiff and retentive, the necessity for shade has no existence, and may absolutely be injurious. The deep mellow loams often found by the sides of rivers form an excellent soil for the Lettuce; and many old kitchen-gardens are equally adapted, where they have derived the full benefit of a position near to the dung-yard; for the plant is a gross feeder, delighting in the juices of decayed matter as well as animal manure.

It being, therefore, admitted that this plant delights in the deep rich soils above alluded to, we are next to consider the varieties held most in estimation; and so far as names go there is no lack; and some cultivators have divided the family into six or seven groups, assigning certain distinctions to each; but we shall not extend our list so far, but content ourselves with classing them as divided into two really distinct kinds—the *Cabbage* and *Coss*—the former having a more decumbent

growth, with broad undulated leaves folding over each other, forming a sort of compressed globe when well grown, and the inner portion of a beautiful white, decidedly more so than that of the next section. These *Cabbage Lettuces*, of which the *Tennis Ball*, *Drumhead*, and *Malta*, are good types, are less likely to run to seed in the hot weather of summer than the *Coss*, but it must be borne in mind that the latter is the most esteemed when well-grown. Now, as the varieties of *Coss Lettuce* are very numerous, and though names have been multiplied to a fault, yet there are evidently kinds presenting features of distinction which will always secure them or their progeny (if of a different name) a place in the garden; for we have the *White Coss* and the *Brown*, the *Paris*, *Brighton*, and *Bath*, with their connecting links of various kinds, all claimants for distinction; and though it would be difficult to give specific rules adapted to every place or situation, we would say that it is difficult, if not imprudent, trying to grow the *White Coss* well on very hot, dry, gravelly soils in summer. The *Brown* is less likely to run to seed, but will require tying up very early in its growth, which, unless liberally supplied with moisture, will be meagre. The best, perhaps, for standing hot weather unassisted, and under disadvantageous terms, is the *Brighton Coss*, but this has assumed so many other names, and been presented to us under so many other features, that its former characters are much modified now; still, however, the *Brighton* is a good useful Lettuce; while to those whose ground is capable of growing the best kinds to perfection, it is likely that some of the white kinds will be more acceptable. There is, amongst some of them, a disposition to blanch themselves, and their lance-shaped leaves are what is termed *hooded*, at top, which is a contraction of the marginal surface, so as to present a spoon-shape appearance on its upper point, the insides of which fold over each in close and beautiful order; and the whole is represented as not wanting any tying, which they certainly do not; but they do not often arrive at so large a growth as the others; and are, besides, less crisp in their eating qualities, although equally white and pretty to the eye, that, except in those cases when after-attendance in the way of tying-up, &c., cannot be guaranteed, these hooded varieties have no more claims on our notice than commoner kinds, and when they have to stand the winter there is a lack of hardihood in their constitution.

Now, as a really well-blanchd Lettuce forms an indispensable part of the "bill of fare," and, with very few exceptions, all classes, from the humblest cottager upwards, seem anxious to procure it, the amateur cultivator must not deny it that due attention which its merits entitle it to. One of the richest, as well as the coolest, situations must be reserved for it in summer; and in winter, one of the warmest, driest, and most sheltered. Its quick growth, and equally rapid decay, is sometimes the cause of its being planted as a temporary crop between others more durable than itself; and where a plot of ground is set apart for winter Brocoli, and the plants not to be planted there for three weeks or more, an alternate plant of Lettuce might be put in, after first marking out the spot for the Brocoli; these Lettuces would grow and be removed before the legitimate crop required the full space. This is sometimes done when the temporary and the permanent ones are planted together, but it is better when the former has a start; but, in order to ensure good useful Lettuce at all seasons, and more especially during the summer, it is advisable to sow and plant some under different circumstances, and by all means to sow some where they are wanted to remain for good, as it is in such situations that the best and most useful heads are often produced.

It would be idle to give directions fitting for all seasons

and eases, yet we may venture to affirm, that a dry, gravelly soil will, under all circumstances, require to be treated this way, unless in very moist weather, or when the ground is frequently inundated by some artificial watering;—the former, it is almost needless to say, being the most beneficial; however, many makeshifts are adopted, each one most likely more adapted to the wants of the particular place than any other would be, and each, to a certain extent, successful. A north border may be sown or planted with Lettuces during the early part of summer, which will probably arrive at a maturity superior to those grown under a more exposed position, the shade of a wall being certainly preferable to that of trees; the latter, in most instances, robbing the ground of its most useful juices, which, in summer, are never too abundant anywhere; so that whenever they seem deficient, recourse must be had to the watering-pot; and if liquid-manure is to be had sometimes so much the better.

It is, perhaps, better not to depend on one kind alone, unless on a proved good one; and in all cases, where a difficulty exists in rearing young plants, from the superabundance of slugs, or other enemies, or where the dry nature of the ground renders it difficult to grow them to perfection, we advise the amateur to try them under different circumstances, for it may happen that the least promising may turn out the best, and *vice-versâ*; so that, after sowing commences early in spring, some of the best *Coss* and *Cabbage* varieties may be sown every ten days or so until the end of July, and in different situations, and not unfrequently amongst other crops; but after the above-mentioned time, only those capable of standing the winter ought to be sown, of which we shall mention more hereafter. In the present case, we advise the amateur to transplant those sown early in the spring on some piece of well-prepared ground, about fifteen inches apart each way, and some succeeding crops may possibly be treated the same way; but those sown after the middle of May, ought to be sown somewhere in drills, a foot or more apart, and the plants thinned out, leaving some to grow there, which they often will, while their neighbours, which were planted out, are running away to seed. This, as we have before stated, is more especially necessary on a dry soil than on a damp one, taking, of course, the character of the climate also in consideration.

J. ROBSON.

SOWING GRASS SEEDS.

To insure success in the cultivation of Artificial Grasses, including the Clovers, great care and nicety in the preparation of the land is requisite; and the time of sowing, and the rotation of cropping, are also matters of much importance. In preparing the land for the reception of *Clover seeds*, it is essential that the finest tilth possible should be obtained, either by exposure to the weather, or by constant working of the harrows and roller; but the best tilth will usually be secured by the combined action of both frost and a liberal use of those implements.

The best time for sowing the Clovers is from the middle of March to the last week in April, after which period the land often becomes too dry for these small seeds to vegetate at the proper time; and when the plants make their appearance at a late period, the corn amongst which they are commonly sown becomes too strong for them and overpowers them. The consequence of this will be a deficient hay crop, and the succeeding crop of wheat generally suffers from the same cause, for it is well known to all practical farmers, that a good crop of Clover hay taken off the land is one of the best preparations for a wheat crop upon all dry and light soils. It is also hazardous to sow Clover seeds previously to the middle of March, because the night frosts peculiar to that month endanger the plant; it cannot withstand the effect of frost in the infant state; and thus large breadths of Clover seeds are cut off and destroyed in seasons when frosts occur at a late period.

Clover seeds take best when sown after the roller, and followed by one light harrowing, or, otherwise, sown upon a fine harrowed surface, followed by the roller. I prefer to roll the land before the plants make their appearance, although it is a common practice, with many parties, to roll the land some time after the plants come up; but it will be found that the roller destroys great numbers of them, which, unable to bear the pressure and disturbance of the soil, are crushed beneath the broken clods, and do not appear again. The quantity of Clover seed required per acre will be from 12 lbs. to 14 lbs. of the *Broad* and *Dutch* sorts; but of the *Hop-clover*, or *Trefoil*, about 14 lbs. to 16 lbs.: these quantities are requisite when grown alone, but mixed with *Italian*, or other *Rye grass*, at the rate of one peck per acre, from 2 lbs. to 4 lbs. less will be sufficient.

The most general mode is to sow Clover seeds amongst the barley and oats, but they take well if sown upon the young wheat, the land being harrowed twice, and then rolled. The reason of the Clover plant thriving so much amongst the wheat is because the wheat usually stands thinner upon the land than barley or oats, thus affording the Clover more light and air. The most important point in Clover cultivation relates to the rotation of crops, for it is found in practice that a good plant of Clover cannot be depended upon if sown every four years; it has, therefore, been found desirable to change and alternate the sorts, by growing the *Broad*, *Dutch*, and *Trefoil* Clovers separately, which mode will, under the four-course system of husbandry, give a crop of each kind of Clover once in twelve years. This mode of changing the crop is rendered necessary by the land, in many cases, having become tired of Clover, or what is commonly called "Clover sick;" but this applies more particularly to *Broad* Clover, although the other varieties receive benefit by change. It is somewhat singular that scientific research, and practical experience combined, have not been able to find out the cause of this "Clover sickness" of the soil, and it is vain to hope for a remedy until the cause can be ascertained.*

Italian Rye-grass should now (April) be sown amongst the young wheat plant, and harrowed in, leaving the land rolled. When autumn feed for sheep is required in the wheat eddishes, this sort of grass furnishes a constant supply of nutritious food during the months of September, October, and November. It does not, however, answer for autumn food upon thin land, and on high, cold, and exposed situations, but produces sheep feed all the winter upon good rich loams, in warm, sheltered localities.

In sowing grass seeds for *two or three years lay*, or for *permanent pasturage*, I have found it answer best not to sow the seeds amongst the corn crops, but to prepare the land well, give it manure of some kind, and sow the seeds upon the fallow surface in the month of May. It will prove best if the land has not been recently ploughed, in which case the weed seeds near the surface will have vegetated, and may be readily destroyed by using the scarifier previous to sowing the seeds. The grass should not be mowed for hay, or soiling, either the first or second year, but fed by sheep or cattle; this will give time for the grass to get firmly rooted in the soil, and, if not fed too hard and close, is much preferable to mowing, as the lay is inclined to become hollow and bare after the scythe has been over it.

The sorts of grass seeds necessary for permanent pasture will vary according to soil, and parties intending to seed land for a permanency will do well to apply to any of the large seedsmen, who, after the soil has been described, will furnish seeds adapted for use, already mixed, with directions as to quantity.—JOSEPH BLUNDELL.

REPENTING AT LEISURE.

By the Authoress of "My Flowers."

IN these days it is very much the custom for young people to take the law into their own hands. For this, no doubt, the parents are, in the first place, to blame; because they

* The most reasonable theory is, that each plant has its peculiar enemies, either in a vegetable or animal form, and that the seeds of these enemies remain in the soil, allowing other plants to escape with impunity, but attacking with avidity the plant which affords them their proper nidus. By not repeating particular plants for a long period the seeds of its enemy are destroyed.

are commanded to train up their children in the way they should go; and woe unto all who forsake or neglect the laws and precepts of the Lord; *but* He has spoken also to children quite as loudly and as strongly; and woe unto them when *they* turn a deaf ear to His commands.

In nothing does this "offence" and this "woe" show themselves so frightfully as in the case of wilful and rebellious marriages. Young people set themselves up to act for themselves, and choose each other for life, in defiance of their parents; and rush headlong into that awfully solemn estate, which, if we thought about it as the law of God would have us think, nine out of ten would not dare to undertake.

Philip Turner is the son of a farmer. His father, George Turner, was the spoiled, ill-brought-up son of another farmer, who made his eldest boy a half-gentleman, and the younger a labourer on the land. George Turner brought up his son to be anything he liked. He was a heavy-faced, lumpish, violent boy, who forsook "the law of his mother," for she had no rule or influence over him, and his father encouraged and allowed him to give way to all his tempers, and do just as he pleased. When a child defies his mother, there is "death in the pot."

Philip grew taller, and heavier in feature and expression year after year. Mrs. Turner was a mild, gentle, wretched-looking woman, whose face seldom bore a smile, and who, indeed, seldom was seen at all, except on the Sabbath day. Her husband was a civil spoken man to the world, but there was that in his face that savoured of incivility at home, and a temper that could not be turned if once he took a thing into his head.

In process of time Philip disappeared from the neighbourhood. He had become a medical student in a London hospital, and, of course, was but little at home. When he did come, he was growing up into a tall, large-boned, clumsy, young man, but the heavy, violent face was there still, and did not win favour for him at first sight.

At length it was discovered that Philip had been married a whole year, without his own parents, or those of his wife, knowing a word about the matter. A boy and girl had fancied themselves in love, and probably, fearful of so wild and foolish a step being prevented, took the law into their own hands, and married without saying one word to any body.

What was said or done by the fathers and mothers on this occasion I never heard. The young people had not a half-penny between them; but to the best of my knowledge they lived with their baby, with Philip's father and mother, who were themselves not over-burdened with riches. I believe the young man tried to get practice in or near London for a time, but it came to nothing. I heard of them so constantly at the fathers, that I conclude they lived chiefly with him, but until lately nothing much was known of their proceedings.

A short time ago, however, I heard that Philip and his wife and child were in the immediate neighbourhood, and had been so for several months. The poor young wife was very ill, and this circumstance brought them to light; for they had been so shut up until her illness that few persons knew they were in the country. A nurse was engaged to attend upon Mrs. Turner, and the medical attendance nearest at hand was called in. All this was well. But the rudeness, violence, and savage demeanour of Philip scared every one else from the house. No one dared go near the place; no one ventured to enquire how the sick wife was—all was silent, dark, and unknown about the cottage.

The place where they were now residing was the joint property of Philip's mother and aunt; and in right of his own parent, it was supposed, he had made it his home for a season; but soon after his settling there, his aunt, who had previously occupied it, harnessed her little pony carriage and departed to her sister's house. The violence of the young man was too great for the quiet habits of a spinster, and it was suspected that her life was endangered; for Philip was subject to outbreaks that looked almost like fits of actual madness. His poor little wife recovered from her illness, and is now well; but there they remain, shut in together, just as they did before, and neither on week days or Sabbaths are they ever seen.

I have had an opportunity of learning something of the workings of this poor young man's mind. A relative, who knew

him well, has said, that he is exceedingly miserable. Remorse for the fault he committed in deceiving his parents as he did in his marriage preys upon him, and repentance of this kind is very bitter indeed. Then, no doubt, the madness of marrying at all so young, and without a sixpence, must weigh heavily. He has two children now; no profession, and no means of supporting his family as a husband and father ought. If this had been laid before him when he was a thoughtless medical student he would have considered it very cruel, very untrue, and very tyrannical. As it is, he has no one to blame but himself, and the poor heedless girl who took him for better and worse; and judging from things that do appear, we may but too justly suppose that much that passes within the cottage walls has made her, too, repent that ever she consented to a secret and unblest marriage.

What can be more wretched, more hopeless, more calamitous, than such a wedded life as this? Two persons—almost children themselves—with infants springing up around them, looking before them into a long and weary futurity, with no way of cheerfulness or comfort to gild the scene. A violent, morose, unemployed husband, and a young, ignorant, frightened wife. How will *their* children be trained and nurtured? Fearful are the consequences; long is the train of evil arising from the misdoings of a single individual. One weak, careless, or wicked parent, sends forth into the world generations of weak, careless, or wicked men. There seems no end to the mischief. Evil is so bound up in the heart of man that it multiplies by thousands, when goodness only multiplies by tens. How needful, then, that all should take heed to their own ways, that they may not bring up "children that are corrupters." How needful that the tree be good, that the fruit be good also.

Unconverted persons, when they are ever so well-meaning and anxious to do right, go blundering on from one side to the other, without any compass to steer by. They do the best they can for their children, and strive with all their might after it; but they can do no *real* good. What, then, must be the end when nothing at all is attempted? It is only the man who knows the plague of his own heart, who has tried the only remedy and found it good, that can even try to bring his children up "in the nurture and admonition of the Lord," which is the only way in which they can go for happiness and safety. A youth who has been taught to fear God will be the one most likely to obey his parents; for though we cannot turn hearts, we may teach and impress them; and a blessing is promised to attend all those who "teach" God's words "diligently to their children," and speak of them when they sit in their house, and walk by the way, and lie down, and rise up.

Let young, heedless, self-willed people consider the comfortless condition of Philip Turner and his wife; and let parents and children remember, that if in "*all our ways we acknowledge God, He will direct our paths.*"

ONE OF THE MOST PROFITABLE KINDS OF APPLES.

FREQUENTLY seeing the question asked by amateurs and others—"Which are the best kinds of Apple-trees to plant in this or that locality?"—I venture to recommend one in particular, that deserves a place in every establishment, however great or small, where an Apple-tree will grow—namely, the *Hanwell Souring*. This tree, it may be said, is best adapted to orchard culture, on account of its large, strong, spreading growth, or habit; but I would not be without it even if I had only a small cottage plot of ground. In the latter, I should plant the *Old English Codlin*, or the *Hawthornden*, as my early pudding and sauce kinds, and the *Hanwell Souring* as my principal keeping and lasting kind. With a due number of these I could provide apple puddings all the year round, and what a cheap luxury is this for a poor man and his family's dinner.

The *Hanwell Souring* is one of the best bearing trees I know. I may say it is a sure bearer, and a large and good keeping fruit. It is an Apple the cook will never find fault with; and those who like the flavour of a real good Apple towards the months of April, May, and June, will still find that flavour in this. This renders it, in these late months,

a useful dessert kind, when others run short, and have become shrivelled. That indefatigable author, Mr. R. Hogg, in his excellent book on *British Pomology*, gives the following correct account of this Apple:—

“Fruit above the medium size, three inches wide, and two inches and three-quarters high; roundish-ovate, angular, or somewhat five-sided, and narrowing towards the eye. Skin greenish-yellow, sprinkled with large rusty dots, which are largest about the base, and with a faint blush of red next the sun. Blyo closed, set in a deep, narrow, and angular basin, which is lined with russet. Stalk very short, inserted in an even funnel-shaped cavity, from which issue ramifications of russet. Flesh white, firm, crisp, with a brisk and poignant acid flavour. An excellent culinary Apple, of first-rate quality, in use in December, and keeps till March, when it possesses more acidity than any other variety which keeps to so late a period. It is said to have been raised at Hanwell, a place near Banbury, in Oxfordshire.”

Those who are interested in Apple culture should certainly possess this work. It is the most complete one on the Apple in existence at the present day. The author, and the man to whom the work is dedicated, have spent almost a life-time among fruit, and are allowed to know more about them than any other two men in England. This is just a nice book for gentlemen or ladies to put into the hands of their gardeners as a present—setting him up at once with a complete history and description of the Apple; thus enabling him to go to book as he may occasionally require. I like to be able to go to book, notwithstanding I have heard many men say they never troubled themselves about books, or that they would not give a farthing either for books or for book-men. I quite disagree with these men, and like books and book men too. My brother gardeners may be assured that going to book makes one perfect out-of-book—that is, in our practice. When any fresh plant comes to my hands, whether from the nurseryman or friend, I never take their word for its name; I always go to book about it, and am never satisfied until I have seen its name in print; thus implanting the matter so much the more on my memory. Besides, if one was never to see many of those awkward names of fruits and plants, it is for certain one never could spell them correctly.

This is rather running away from the Apple story; but I will return by saying, I first became acquainted with the *Hanwell Souring* while living at Tusmore House, in Oxfordshire, as gardener there. This noble house is about twenty miles from Banbury, in the same county; and in its fine old kitchen-garden were four or five trees of this favourite kind of apple. One, in particular, of their number, was the finest specimen I think I have ever seen. Without any doubt, all were planted at the same time, but the others had been cut away to prevent their over-shading too much ground. Now of Apples of profitable kinds, never saw I such, before or since, about any other gentleman's mansion. There were no great variety of sorts; I think I may safely say not above twelve or fourteen varieties altogether; three of which were culinary kinds, namely, the old *English Codlin*; the true *Lemon Pippin*, such as I used to see in Gloucester and Herefordshire, and also is a first-rate sauce apple, and a good keeper; and the *Hanwell Souring*. The last yielded the greatest bulk, and the fruit was ready for use by the time the Codlins were over; so that the grand thing, where one has to serve a family, great or small, was secured, namely, to have enough in bulk of certain and good productive kinds, both for the dessert and kitchen uses, and in both cases, early as well as long-keeping kinds are required. Among these are the *Cornish Gillyflower*. Who would be tired of seeing this at their table? It is one of our best eating and dessert kinds, and may be had in use for three months, or even longer, if one had enough in bulk to take from. This is the very kind to have in large quantity. Just the same may be said of very many other kinds, yet how rare it is to find too many of the old *Nonpareil* in any garden! This is another long-keeping kind, and sure to give good satisfaction in the dessert. It is too much the fashion to have many different pecks in the apple-store to supply from, but we gardeners want the quantity and quality too. A great variety of Apples is all very well, particularly if we want to exhibit at a horticultural show; but for the supply of the rich man's

kitchen and dessert-table, enough in bulk of good sorts, to go through the season in succession, is the main point to aim at. Now, this large Apple-tree in the kitchen-garden, at Tusmore House, has been commonly known to produce from forty to fifty bushels of Apples in a season. The other trees gave their share too; and, indeed, it was a saying with the garden-men who had known these trees for years, that they always bore a very heavy crop one year, and a good middling crop the next year, and so on successively. Such I have noticed since to be the case with this kind of Apple. The soil of this garden was of a tenacious character, just such as suited the Apple and fruits in general.

When I came to Winchester, although I found a variety of kinds of Apples, I found no *Hanwell Souring* among them; but shortly after being here, and in company with one of the clerks of the Winchester Cathedral, who was from the neighbourhood of Banbury, he asked me if I knew this Apple, I said I did; he then informed that he had two trees of it in his little garden that he had bought of the nurseryman, Mr. Perry, of Banbury. Finding three or four healthy seedling young trees in my master's garden, I headed two of them, and grafted them from these *Hanwell Sourings*, in March, 1835, and two fine trees they now are, and the most useful trees I have in the garden at this time.—T. WEAVER, Gardener to the Warden of Winchester College.

HYBRIDS—POLANDS.

I have little time or inclination to enter into a controversy with “Upwards and Onwards,” but as you say that you leave it to the disputant parties, my silence might be construed into an inability to carry the argument further; and as it would be a simple matter to inundate you with instances of Hybrids between the common hen and common pheasant, I now beg to introduce to your notice the 18th Volume of Penny Cyclopaedia, page 61, from which I make the following extract:—

“The union between the common hen and the cock pheasant is by no means rare, as is well known to those whose homesteads border upon pheasant preserves. The produce of this union is called a *Pero*. Many of these, some of them very fine birds, have been kept together in the gardens of the Zoological Society, in the Regent's Park, but they never, as far as we have been able to learn, exhibit any inclination to breed. They are generally considered, as Mr. Yarrell observes, to be unproductive among themselves, all being half-bred; but the case is different when they are paired either with the true pheasant or the common fowl. Edward Fuller, Esq., of Carlton Hall, near Saxmundham, has recorded that his game-keeper had succeeded in rearing two birds from a barn-door hen, having a cross from a pheasant and a pheasant cock, which he presented to the Zoological Society. On the same evening, when these three-quarter bred pheasants were noticed, Hybrids between the pheasant and common fowl, the common pheasant and the silver pheasant, and the common pheasant with the gold pheasant, were placed on the Society's table for exhibition.”

I presume that this, with the living specimen exhibited in Baker Street Poultry Show, will be deemed conclusive, when it is also considered that there are numerous preserved specimens in the museum of the Zoological Society. It will, perhaps, also be deemed sufficient to negative “Upwards and Onwards's” assertion that “*Hybrids are invariably sterile*,” and, if not, I beg to refer him to the recent experiments made by the late Earl of Derby with a cock bird of *Phasianus Versicolor*, from which single bird he succeeded in rearing 7-8ths bred birds, scarcely distinguishable from the true *Versicolor*; this fact is patent, as the offspring were sold at Knowsley, and a full account is given in the catalogue. I should further state, that this male specimen of *Versicolor* was the only living specimen in Europe. The truth that Hybrids are fruitful when united with the pure breed of either parent, is thus placed beyond a doubt, “Upwards and Onwards” notwithstanding.

Having thus settled the question with your Correspondent, I must have a word or two with your good-selves. You begin by stating that *form* and *carriage* are to be considered. Have I not expressly mentioned *form* in the list of merits sent to you? and as to *carriage*, that depends more on the

health of the birds than on purity of breed. You further object to plumage occupying the *post of honour*. How you would determine the purity of the breed except by the *plumage*, I am at a loss to conceive. And again, you say that a fourth test will be insisted on, and that is in an economical point of view. I confess, that after so many sensible (if you will allow me to say so) observations from the Editor, I hardly expected that he would have raised a question as to whether, in the same breed, nay, even in the same brood, a spangled or laced, a bearded or non-bearded bird, was the more *economical*; had it been a question between Spanish and Polands, I would have admitted the pertinency of the remark. As to the merits of the bearded or non-bearded, I must surely be admitted impartial, as I do not possess a single specimen of either variety. I am perfectly aware that gentlemen of the *Vivian* school uphold the beards; but can this be wondered at? and "I'll be sworn" that your correspondent, (whose letter you say is before you,) belongs to this class, as it is, in my experience, an impossibility to find a bearded advocate among the real judges who are *disinterested*. I have never seen any attempt at a defence, unless that by Dr. Horner, in Volume viii., may be so considered; but I think you will be candid enough to confess that he leaves the subject where he found it, for sound argument there is none; and, moreover, looking to the prize lists, he is certainly not an impartial judge, if, as I presume, *Master Horner* is his son.

By-the-by, I certainly misunderstood your meaning when you spoke of the Spangled Polands being a recognised *variety*, but I did so from the universal custom in speaking of the animal kingdom of calling a distinct breed by that name.—SCRUTATOR.

[While we have grave doubts as to the imputed parentage of very many of the "*wood-side hybrids*" between the common fowl and the pheasant, there is no question that such birds have been produced on several occasions, though as to their breeding *inter se* we have no proof. Stranger crosses than you mention have, however, occurred—one between the pheasant and pinto, for instance; and a stuffed specimen of the pheasant and red grouse is in the possession of a friend.

The question of the fertility, *inter se*, of hybrids between the pheasant and common fowl is not settled by the well-known instance of Lord Derby's *Versicolor* pheasant, the union of which with *Phasianus Colchicus*, a closely allied species, was a very different thing from that of birds so much more remote as those we are now speaking of. Again, we cannot consider that "*carriage*," as a characteristic of any family of fowls, and such it certainly is, can be regarded as merely dependent on health; *plumage*, also, was to be taken in conjunction with other points there referred to. But these remarks of ours, with the mention of the fourth test, of *economical excellence*, were made in reference to the principles on which poultry at large were to be judged, and were not limited to any particular breed.

"*Beards or no beards*" is still a matter of opinion; and we certainly cannot admit the charge of partiality, which you imply, by our leaving it an open question for future decision, since with us the beardless, we confess, would have the preference; but knowing, at the same time, how strongly some good judges differ from us, our own opinion was thus cautiously expressed.

We think the different races of our domestic poultry might properly be spoken of as *sub-species*; certainly this would be permissible, until stronger evidence is forthcoming than is now before us, of the necessity of assigning them all to one original parent, a conclusion which can hardly be drawn from the premises we now possess. But we own, that there can be, in our opinion, little question as to the propriety of calling the Spangled Polands "*a recognised variety*;" had they not been so, they would not have received the position assigned them at our Exhibitions.

We have to thank you for your communications; and if, unfortunately, our opinions should not exactly accord on some of the many questions that have lately disturbed the realms of poultrydom, our object is still the same; and a better acquaintance with the various domesticated members of the gallinaceous tribes is with both the point to be attained, though possibly by different paths.—W.]

SOMETHING ABOUT BEES.

"Yea, I will sing how the celestial boon,
Honey, by some sweet mystery of the dew,
Is born of air in bosoms of the Flowers,
Liquid, serene; and how the diligent bees
Collect it, working further with such art,
That odorous tapers thence deck holy shrines.
O sights, and O effects, lovely and strange!
Full of the marvellous and the beautiful!"

So Leigh Hunt, in his "Jar of Honey from Mount Hybla," translates a passage from "the Bees" of Rucellai: those who have read the "Jar" need not be told that, notwithstanding its name, a very small portion only (about ten) of its pages is devoted to bees—a fact that we do not at all regret, seeing that in this small portion he makes two blunders; one, in the assertion that bees will not thrive amongst echoes; the other, that the drones are *stung* to death in the autumn by the working bees.

We thank him, however, for the graceful collection of historical, poetical, and legendary lore that he has laid before us, but, in thanking him, must not forget the share that our old friends, the bees,—the "sweet little angels of the flowery herbs," the "little virgins chaste," as he calls them—have had in the composition of it; as has been the case in hundreds of other instances, they are its ostensible godfathers; and it would indeed seem, that whenever an author wants a sunny subject, he fixes upon our favourites, and hangs the cobwebs of his fancy on the gossamer of their wings.

In spite of the reams of good paper that have been spoilt in treating upon bees, there are many, very many, points relating to their natural history and internal economy, that baffle the most skilful and patient investigation: the learned and entertaining author of the article from "The Quarterly," lately re-published in Murray's "Reading for the Rail," mentions that De Montford, who wrote on the subject of Bees in 1646, enumerates between five and six hundred authors who had then written on the subject; it would, perhaps, be difficult to reckon up how many have written since that time. Many, however, of those who have, discarding the fables of earlier writers, have cheerfully amused themselves by pulling down the gods of others and setting-up their own, either in the shape of new classifications, or new theories of internal economy, or new modes of management, or new "inventions" of some kind or other. And here we would remark on the manner in which this word "invention" has been prostituted of late. A man makes his boxes of 1½-inch stuff instead of inch, or takes an inch off their height and adds it to their width, or contracts them towards the base, or what not, and dignifies each alteration by the term "invention."

These ideas, started by Leigh Hunt, bring us to THE COTTAGE GARDENER, and the consideration of what it has done for the advancement of bee science. We have been lately going through the papers and notes on Bee-keeping that have appeared in it since its commencement, and we have certainly been somewhat amused at the very mild advice given to those seeking information in the earlier volumes: it was not long, however, before signs of increasing intelligence appeared, and the light which began to dawn about the latter end of the first, has become stronger and stronger in each succeeding volume, until the sound sense of Mr. Payne; the interesting, but somewhat speculative suggestions of "The Country Curate;" and the suggestions, practical and otherwise, of the myriads of skirmishers that have hovered between the two, ever ready to dare for the advance of their favourite science, and never ashamed to confess the ill-success of their experiments when unsuccessful, have made our pastime something more than a dull routine.

Yet, we who have gone quietly with the stream scarcely perceive how swiftly it now runs—in what a blaze of light we carry on our experiments: certainly, as already hinted at, our "vaulting ambition" has sometimes "o'er leaped itself;" still, though we may have "fallen on the other side," we have mostly come down upon our feet little the worse for our tumble: progress has been the upshot of our endeavours, and though the progress has been so gradual that we scarcely perceive, yet, if we adopt the same rule in the present case that we adopt in estimating the progress of mankind in everything that civilizes and exalts, and make

rests at stated periods, and compare the state of our science at the commencement of the several periods, we shall be able to estimate pretty accurately the progress that has been made.

If we mistake not, *THE COTTAGE GARDENER* was one of the first, if not the very first, periodical that opened its pages to bee-keepers. Formerly we used to get in bee-books the experience of an individual bee-keeper, who filled up the outline of his own experience, and the details of his own particular hobbies, with the stereotyped platitudes of his predecessors. The book was published; some poor enthusiast bought it; followed its directions; failed of success, and became disgusted with bees; no one was by to offer good advice. Now, week by week, we have failures and successes alike chronicled, and he must be indeed a dullard who cannot, out of the calendars and other papers that are continually being published, knock out a safe and profitable mode of practice. If we look back upon the various suggestions for, and well tried modes of, ventilating, driving, fumigating, forming artificial swarms, superhiving, removing supers, giving water, feeding, making food, &c., and the interesting notes that have appeared upon position of hives, consumption of hives, weight of comb in hives of different ages, honey-dew, formation of Queens, &c.; we cannot but admire the truth of what has been urged; and while these last-mentioned subjects are, perhaps, chiefly interesting to those who have had some experience, it is quite clear, from the nature of the questions put, and from the admissions continually made by correspondents, that *THE COTTAGE GARDENER* has greatly increased the number of bee-keepers.

What, we would ask, is it that makes bees such general favourites, particularly to us dwellers in dull climes where disappointment awaits us in almost two seasons out of three, and where we have neither the orange-blossoms of the Isle of Bourbon, nor the rosemary of Narbonne to impart their perfume to our honeyed store? Is it not because, in the midst of the hurry and anxiety of business, they are suggestive of heather and wild thyme, of apple-blossoms and laburnum, of Hybla and Hymettus; because we mount upon their backs and follow them in their flight to the scenes of our autumnal rambles; because in these rambles a knowledge of their habits often enables us to drop a word of advice and encouragement where it is most wanted; because we take pleasure in explaining to the little ones about us the wonders shewn in the economy of these insects, and so prepare them to receive, unscathed, the shafts wherewith the Great Enemy, clothed in the garb of materialism and the pride of reason, may before long assail them.

Before closing these notes, we would recommend every bee-keeper who is alive to the poetry of bee-keeping to read the article from the "Quarterly" already referred to: however much a practical man may differ from the writer on some points, no one with any pretence to taste can fail to be pleased with the elegant manner in which the subject is treated by him, nor with the admirable review it contains of many of the writers who have treated of the honey-bee.

As we commenced this paper with poetry, we will end it in like manner: however frequently we may have come across the following passage, and whatever, as naturalists, we may think of its truth, it will never lose its freshness or beauty to those who really like bees; it moreover beautifully conveys one of the many lessons which their habits are calculated to teach. After having enforced from their example the great principles of contentment and obedience, and shewn the influence of those principles on the community at large, the poet proceeds to infer analogically, how it is quite possible that the many interests that are at work in the world are, in fact, all "working together for good," though they may appear conflicting to us, who can only grasp one or two links in the long chain of events.

"Therefore doth heaven divide
The state of man in divers functions,
Setting endeavour in continual motion;
To which is fixed as an aim or butt,
Obedience: for so work the Honey Bees;
Creatures, that, by a rule in nature, teach
The art of order to a peopled kingdom.
They have a king, and officers of sorts;
Where some, like magistrates, correct at home;
Others, like merchants, venture trade abroad;
Others, like soldiers, arm'd in their sting,

Make boot upon the summer's velvet buds;
Which pillage they, with merry march, bring home
To the tent royal of their emperor;
Who, busied in his majesty, surveys
The singing masons building roofs of gold;
The civil citizens kneading up the honey;
The poor mechanic porters crowding in
Their heavy burdens at his narrow gate;
The sad-eyed justice, with his surly hum,
Delivering o'er to executors pale
The lazy yawning drone. Hence we infer,
That many things having full reference
To one concert may work contrariously;
As many arrows loosed several ways
Fly to one mark;
As many several ways meet in one town;
As many streams run into one self sea;
As many lines close in the dial's centre,
So may a thousand actions, once afoot,
End in one purpose, and be all well borne
Without defeat."

R.

DISEASES OF FOWLS.

CROP-BOUND.

A very large Cochin Cock of last year, who had for some time been the despotic ruler of the yard, was deposed, after a short combat, by a new arrival from "Stevens';" after being conquered, he was so much hurried and driven by the victor that he was even prevented from feeding, and in a few days drooped to such an extent that his removal was deemed necessary, after which, he took the earliest opportunity of eating a very large quantity of barley, &c., and filled his crop to a degree of which only a Cochin is capable. The food in the over-distended crop remained there for several days, not passing into the gizzard, consequently the bird was half-starved, and became exceedingly hungry, eagerly devouring grass, &c., &c., which, of course, added to the evil. In this state I first examined him, and found the crop *extremely* distended with a perfectly solid, unyielding mass of food, which had remained there for five days:—after securing the fowl by wrapping a long piece of netting round the legs and wings, (in the same fashion that a spider adopts in securing a fly), I picked off a few feathers, and made an incision, two inches long, through the skin, muscular fibres and crop, and extracted, with some trouble, an immense quantity of exceedingly offensive grain, grass, &c.; washed out the crop by repeatedly pouring water through the opening, and then sowed up the wound, taking care that the edges of the crop and of the skin were neatly brought together.

Perhaps some persons may imagine the operation to have been both unnecessary and cruel; I feel confident, however, that it saved the life of the bird; and as to the pain inflicted, it could not have been very severe, as the animal, whilst held down on its back, made every effort, not as may be imagined to escape, but to reach and devour the corn which was being extracted from it. A few hours after the operation the fowl was fed with some oatmeal-gruel, and was obviously much better, the food passing through the bowels, which, for several days previously, had not occurred. The obstruction was caused simply by the compact character of the solid mass which distended the crop, as, upon examination, I found that there were not any substances contained in it larger than peas. The following day the patient appeared much better, took soft food freely, which was properly digested, &c. &c., and afterwards rapidly recovered, the stitches having been carefully cut on the third day after the operation.—W. B. TEGETMEIER.—*Tottenham, Middlesex.*

[Usually, if promptly treated, when a fowl with "a hard crop," or crop-bound, has a teaspoonful of gin or brandy poured down its throat, the torpid crop is so stimulated as to pass the mass of grain.—ED. C. G.]

POULTRY SHOWS.

ROYAL DUBLIN SOCIETY'S CATTLE AND POULTRY SHOW.—This was on Tuesday, Wednesday, and Thursday, the 29th, 30th, and 31st March, on their spacious premises, Kildare-street, Dublin, and had the merit of superiority in both quantity and quality to former shows. The splendid cup presented by Messrs. Purdon, of the *Farmer's Gazette*,

value one hundred and twenty guineas, has been carried off by Charles Townley, Esq., M.P., near Burnley, Lancashire.

THE POULTRY,

Consisting of 270 lots, were very superior. The *Shanghaes* were evidently and deservedly the favourites. A lot from Scotland took the first prize. There were several fine specimens of both partridge-coloured, buff-coloured, and white, some of which changed hands at high prices. In the *Dorking*, the Hon. C. H. Lindsay took the first prize, Lieutenant-Colonel Hill the second. Both lots were fine birds, well matched and coloured. The *Black Polish* are rarely met with so good as those exhibited by Mr. Nolan; they carried off the first prize. They were superior in size, carriage, and topknot. There was no second prize in this class. In the *Spanish*, Mr. Burton was the successful competitor, and Mr. Nolan took the second prize. Mr. A. Hafield, of the Treasury, Dublin Castle, was successful in what we have always named *Spangled-Hamburg*, those with roughs or beards, and large topknots. The *Malays*, which some years since were such favourites, have lost their position; there were some good specimens exhibited, as well as cross-bred birds, for which Mrs. Anne Strahan took prizes.

On Tuesday, at three o'clock, his Excellency the Lord Lieutenant, and the Countess St. Germain and suit entered the show-yard, and was received and accompanied through the premises by Robt. Archbold, Esq., late M.P. for Kildare, and John Molloy, Esq., J.P., County Dublin, the band playing God save the Queen. His Excellency paid particular attention to the stock, and the Countess inspected the poultry with peculiar interest, accompanied by Lord Gough. During their stay the yard was crowded with rank and fashion.

There was a meeting of the Society and their friends in the evening, at which his Excellency presided, and expressed his great gratification at the magnificent display of beasts, swine, and poultry, and expressed his anxiety to forward the intentions of the Society, which, he said, were most praiseworthy.

Part of the stock were dispersed through our Palace of Industry, which is progressing with electric rapidity, upwards of a thousand men being employed; while the clink of hammers gave the pleasing note of preparation for the 12th of May. All space in it being already allotted, nothing can now be admitted but of great value and importance.

Shanghae.—Prize, J. F. Burnside, Esq.—One sovereign.
Dorking.—Prize, The Hon. C. H. Lindsay—One sovereign.
Polish.—Prize, J. J. Nolan, Esq.—One sovereign.
Spanish.—Prize, R. E. C. Benton, Esq.—One sovereign.
Spangled-Hamburg (now called Spangled-Poland).—Prize, Arthur Hafield, Esq.—One sovereign.
Malay.—Prize, Mrs. Anne Strahan—One sovereign.
Cross or other Breed.—Prize, Mrs. Anne Strahan—One sovereign.
Siberian Pheasant (now called Spangled-Hamburgs).—Prize, R. P. Williams, Esq., Drumcondra—One sovereign.
Chickens.—Prize, Mary Hughes—One sovereign.
Capons.—None.
Aylesbury Ducks.—Prize, John F. Burnside, Esq.—One sovereign.
Rouen Ducks.—Prize, Henry L. Prentice, Esq.—One sovereign.
Ducklings.—Prize, Thomas Fleet, Esq.—One sovereign.
Hong Kong Geese.—Prize, Mrs. Teresa Carton—One sovereign.
Goslings.—Prize, Thomas Fleet—One sovereign.
American Turkeys.—Lieutenant-Colonel Hill—One sovereign.
Other Breeds.—Prize, R. P. Williams, Esq.—One sovereign.
Turkey Poults.—Prize, Thomas Fleet.

The following gentlemen were judges—George Stirling, Esq., James R. Dombrain, Esq., and Isaac M. D'Olier, jun., Esq., Booterstown.

KENDAL POULTRY SHOW.—Considering the unfavourable season of the year for an exhibition of poultry, we must regard the show held at Kendal on the 18th and 19th of March as a most successful one.

The number of pens entered were between 200 and 300, and upon the whole were of average merit. The classes were very unequally represented, the Spanish and Dorking being by far the most meritorious; indeed, the single-combed Dorkings, as a class, have been but seldom equalled, certainly never surpassed; the first prize birds in both the classes of single-combed Dorkings possessed all that the most fastidious could desire.

The *Shanghaes* were numerous, but exceedingly bad; indeed, there were not many pens deserving the prizes offered by the Society; and in the chicken classes the first

prize was altogether withheld, as the only pen in this class that deserved especial notice, and merited the first prize, was disqualified by a law of the Society that prohibits "trimming or artificial alteration of the plumage." The pen was bred from the stock of Messrs. Cattell and Sturgeon, and were birds of distinguished merit, but the law above referred to, rendered it imperative in the judge to disqualify them.

The *Aylesbury Ducks*, *Turkeys*, and *Geese*, were all good, and were exhibited in excellent condition. The first prize *Aylesbury Ducks* found a ready purchaser at a much higher price than we have before heard of.

We are pleased to add, that the Odd Fellows' Hall, a capacious building in every way suited for the occasion, was literally crowded from the time of opening until the close of the show. The whole arrangement reflected the highest credit upon the committee, and honorary secretary, Mr. James Gelderd, and we sincerely hope the funds will be equal to the expenditure. The judge upon the occasion was Mr. James Bissell, Birmingham.

SPANISH (Cock and two Hens).

First prize, Mr. R. B. Parkinson, Kendal. Second prize, Mr. Thomson, Hyning. Third prize, Mr. Whitwell, jun., Tolsen Hall.

SPANISH (Cock and two Pullets).

First prize, Mr. H. W. Heaton, Copley Wood, Halifax. Second prize, Mr. R. B. Parkinson, Kendal.

DORKINGS, SINGLE-COMBED (Cock and two Hens).

First prize, Mr. G. A. Gelderd, Kendal. Second prize, Mr. Thomas Robinson, Ulverston. Third prize, Mr. W. Talbot, jun., Lane House.

DORKINGS, SINGLE-COMBED (Cock and two Pullets).

First prize, Mr. G. A. Gelderd, Kendal. Second prize, Mr. Joseph Morton, Skelsmergh Hall. Third prize, Mr. Charles Ellison, Sizergh Castle. The whole class commended.

DORKINGS, DOUBLE-COMBED (Cock and two Pullets).

First prize, Mr. Thomson, Hyning. Second prize, Mr. C. Reed, Bowness. No third awarded.

DORKINGS, WHITE.

First prize, Mr. C. Ellison, Low Sizergh.

COCHIN-CHINA, CINNAMON AND BUFF (Cock and two Hens).

First prize, Mr. Waugh, Warwick Bridge. Second prize, Mr. Heaton, Copley Wood, Halifax.

COCHIN-CHINA, CINNAMON AND BUFF (Cock and two Pullets).

Second prize, William Thompson, Kendal. Third prize, Mr. James Yeates, Hawthorn Hill.

GAME, BLACK-BREASTED AND OTHER REDS (Cock and two Hens).

First prize, Mr. William Mansergh, Overtoun. Second prize, Mr. Thomson, Hyning.

GAME, BLACK-BREASTED AND OTHER REDS (Cock and two Pullets).

First prize, Mr. H. Heaton, Copley Wood, Halifax. Second prize, Mr. Thomas Robinson, Ulverston. Third prize, Mr. Wm. Mansergh, Overtoun.

GAME, ANY VARIETY (Cock and two Hens).

First prize, Mr. Poole, Hawkshead. Second prize, Mr. Thomas Robinson, Ulverston. Third prize, Mr. H. Rauthmell, Hutton.

GAME, ANY VARIETY (Cock and two Pullets).

First prize, Mr. Charles Robinson, Lancaster. Second prize, Mr. H. Rauthmell, Hutton. Third prize, Mr. Edward Wells, Kendal. The whole class commended.

GOLDEN-SPANGLED HAMBURGH (Cock and two Hens).

First prize, Mr. Thomson, Hyning. Second prize, Mr. James Smith, Kendal. Third prize, Mr. James Smith, Kendal.

GOLDEN-SPANGLED HAMBURGH (Cock and two Pullets).

First prize, Mr. James Rookes, High Barn. Second prize, Mr. Thos. Robinson, Ulverston. Third prize, Mr. Rutledge, Storth End.

SILVER-PENCILLED HAMBURGHES.

First prize, Mr. H. W. Heaton, Copley Wood, Halifax.

SILVER-SPANGLED HAMBURGHES (Cock and two Hens).

First prize, Mr. John Piekthall, Mint House. Second prize, Mr. Thos. Robinson, Ulverston.

SILVER-SPANGLED HAMBURGHES (Cock and two Pullets).

First prize, Mr. H. W. Heaton, Copley Wood, Halifax. Second prize, Mr. G. A. Gelderd, Kendal.

BANTAMS.

First prize, Mr. W. H. Heaton, Halifax. Third prize, Mr. Waugh, Warwick Bridge.

GEESE.

First prize, Mr. W. Talbot, jun., Lane House. Second prize, Mr. Ed. Owen, Kendal. Third prize, Mr. Thomas Kew, Dale House.

DUCKS, WHITE AYLESBURY (Drake and two Ducks).

First prize, Mr. G. Park, Collin Field. Second prize, Mr. G. A.

Gelderd, Kendal. Third prize, Mr. Wm. Ellison, Low Sizergh. The whole class commended.

DUCKS (Any other variety).

First prize, Mr. Waugh, Warwick Bridge. Second prize, Mr. John Pickthall, Mint House. Third prize, Mr. H. W. Heaton, Copley Wood, Halifax.

TURKEYS (Cock and one Hen).

First prize, Mr. Rutledge, Storth End. Second prize, Mr. Rowland Parker, Moss End. Third prize, Mr. George Banks, High Gale.

GUINEA FOWL (Best Pair).

First prize, Mr. R. A. Watson, Gilshwaiteigg. Second prize, Mr. W. Ellison, jun., Low Sizergh. Third prize, Mr. John Pickthall, Mint House.

THE COTTAGE GARDENER'S PONY.

(Continued from page 488, vol. ix.)

THE amount of personal attention paid to our "pony" need hardly be more, and should assuredly not be less than that bestowed on good plough horses on a well-managed farm; for though I would not advise over-care, yet neglect, and slovenliness, and dirt, will never pay in keeping any domestic animal; pachydermatous or otherwise. A well-matched pair of likely young plough horses often make quite as comely an appearance as a pair in a gentleman's carriage (and the best London carriage and Brougham horses serve a regular apprenticeship in the plough; the happiest and brightest portion of their existence;), but the ploughman contrives to groom them completely, morning, noon, and night, in the intervals of a hard, long day's labour; and they mostly lay out at nights in summer. An intelligent country servant, accustomed to the routine of farm stables, will not often disappoint your hopes of making him a groom, provided, always, that you and he do not entirely "expel nature with the fork" from out of the stable, or "she will be back again continually upon you," and with a vengeance, I can tell you that. It seems as if the half-domesticated life, which I have planned, were at one and the same time best for the half-hardy pony and for the cottage gardener too.

The great battle with Caleb Balderstone is always within a week of the first party that he has had to drive his master and mistress to, at some very aristocratic mansion in the neighbourhood. Sir John Phoorinand's grooms; Lady de Llan-daugh's coachman; and the rest, have tempted him; well, if they have not beguiled the honest fellow altogether into the thirsting after that fatal knowledge which has been the death of many a happy gardener in these our days, still, poor fellow, he has partaken of something bad enough, that is too plain; he is quite unsettled. Forgetting Diamond and Derby, the pair that he ploughed with for more seasons than one at Farmer Furrow's, and were afterwards sold for 150 guineas, though never till then out of his hands; and the wonderful traditions of their subsequent rise in the world, till they got into the carriage of a Duke, who gave £500 for them; forgetting all his antecedents, he has got an entire new set of ideas into his head. Let him run on a little. The substance of his present views comes to something like this,—he thinks his master should turn out like other people—considers it the ruin of a harness-horse to ever put him into a cart or plough; if he wants exercise, Caleb could easily ride him out for a couple of hours every morning (galloping races with the young, or standing by the half-hour to gossip with the old of his acquaintance, as the case may be). Caleb thinks the loose-box system very untidy, and would have pony tied up by the head in a stall all day long, that he may be 'handier to come about;' is sure that to be turned out to grass at night in summer is bad for the wind; is sure that cow-dung and clay stopping is better for the feet than the cool dewy ground; but if the pony must needs have grass, he, Caleb, considers there is a great deal of sense in the plan which Squire Fivebargate's man told him of, that is, to have the grass cut in the field, and wheeled by the barrow-full into the stable, and the manure barrowed back upon the land afterwards; the horse standing doing nothing all the time. Caleb thinks the stable should be a great deal hotter; and would nail up the ventilator to save the trouble of regulating it (a feat actually accomplished by the intelligent servant of a certain country Local Board of Health in the very Board-room). Cow-dung

might abate inflammation of the feet perhaps, but to prevent the legs swelling, he would swathe them every night in four nice flannel rollers. If the pony should cough, or be ill after all this care, here is an infallible recipe for keeping all right:—

"*Alterative and Condition Powders for Horses*,—Are strongly recommended for producing a beautiful smooth skin, and for bringing the horse into general good condition; they give tone to the stomach, increase the appetite, and purge the blood from all gross impure humours; they will be found of essential service for grease, swelled legs, coughs, and influenza." Directions,—Give a table-spoonful two or three times a week.

Caleb would have no objection to delegate most of the hard work in the cottage garden to "a daily workman," as he calls him; considering the position of '*valet de chambre* and *nursentender*' to a pampered jade of Asia much fitter employment for a responsible and rational being than the occupation of our first parents. It needs must be, that if you adopt the artificial system of horse-keeping, which is almost peculiar to this country; if you trust entirely to management, and allow nature no chance of remedying your own blunders or your groom's, then, it needs must be, that your man should almost live in the stable, ready to anticipate the smallest want of his horse, and to detect the earliest premonitory symptom of inflammation, cough, strain, or lameness. In this lies the difference between the simple plough-boy and the crack groom. The one knows perfectly well, from experience, that moderate work and moderate speed, cooling diet along with plenty of good corn, cleanliness, cool air, and an occasional run out at grass, will keep his horse in vigorous health, and fit to take master creditably either to church or market. Whilst the accomplished jockey knows that he has to be on the look-out constantly for the slightest and earliest indications of a thousand ailments to which the high condition of his charge renders him constantly liable; and it is this dear-bought knowledge, this foresight, the sad result of previous experience, which makes him presume so confidently on his ability to bring his horse safely and triumphantly through prolonged trials of his speed, endurance, and constitution. But once and again I must remonstrate, that the difference of a couple of miles per hour is not ordinarily of great moment to us cottage gardeners. It is no object to us to keep up the same unbroken pitiless pace, up hill and down, good road or bad, mile after mile, hour after hour, without stop or stay, like the unearthly steed in the old German ballad, "Tramp, tramp, along the land they rode; Splash, splash, along the sea." There never was but one end to a ride out of that description—an end sure to overtake steed and rider, master and man, soon or late.

The story of Actæon eaten up by his own dogs is held by Oxford men to convey a warning against the ruinous expense of keeping a pack of hounds. Doubtless, the ballad above quoted was done into English by Sir Walter Scott to warn young people of the inevitable fate of all hard-riders.

Animal muscular power is, in its nature, intermittent, and by no means constant. A horse, when he comes to a stiff hill, can put forth *eight times* his average strength to overcome the obstacle; although neither whip nor spur, nor noble emulation, will send a steam-engine up an incline, however short, requiring eight times the engine's ordinary power. But nature, conversely, requires rest after such unusual efforts; to make extraordinary efforts, and to prolong them far beyond the natural limits wisely set upon the exercise of this valuable, and oft-abused power, is the destiny of the trained and high-conditioned horse. Like most natural gifts, this one can be improved by education; and the secrets of training cannot be picked up by Caleb, or by any one else who does not devote all his attention to his subject, and who has not the advantage of experienced instructors. The principle is that of the ancient athlete who lifted a little calf every day till she became a full-grown cow. Exercise is mainly relied upon; the exertion which would carry the animal at the top of his speed for say half-a-mile, is prolonged, after daily practice, to three-quarters of a mile, at which it is continued till this can be accomplished with ease, when only it is permitted to extend the task again. Great patience and tact are required to discriminate between beneficial exertion and injurious fatigue. Exercise pro-

longed one step after the animal is distressed is worse than useless. If the cottage gardener wishes to improve his pony's paces, he should either employ an experienced artist for the purpose, or else ride him out regularly himself. Exercise should never be entrusted to an ordinary servant. If a roll in the loosebox, or a range in the paddock, will not keep him right in the intervals of his journies, he must be, by all means, put into a light little cart, mounted on an old pair of carriage wheels, with springs, and set to do a variety of little errands and jobs about the place. For instance, in hot summer weather, cows are best in the house all day; their green fodder then will require carting home for them. All the manure from a model little farm-yard should be very frequently drawn out, and either spread at once, in rainy weather, on the grass land, or thrown in a heap in the corner of the field, to accumulate till it is required. The ordinary plan of allowing some hundred tons of putrid material to rot about the living places of animals and men is too barbarous to be permitted without a remonstrance. The labour, too, of finally removing such a quantity of material when the busy time comes for using it is inconveniently felt; though its gradual removal, say once or twice a week, or fortnight, can generally be accomplished with ease. There are a hundred little operations besides, as I have before observed, such as going to market, loading sand, lime, gravel, stones, tiles, &c., in which the pony may be set to work. It is very needful, especially at first, to load him lightly, and not to let him work in the cart more than half-a-day, nor for many days together. In a few months you will be delighted to see how his arms and thighs will swell out with well-developed muscle; and as he tugs your little chaise up a hill with increased vigour, you will be reminded of the story of the strong man and the calf before alluded to. No offence to you, gentle reader, in the comparison.

The cottage gardener's hay-field should be slightly manured over every part of it at least once a year, if not twice; and all his little bit of pasture once in three years. It is a salutary rule that the frost should touch your top-dressing between the time it is applied and the time that the grass or hay comes to be eaten. I am aware of the many advantages resulting from abridging the quantity of meadow ground, and growing artificial grasses instead, in the course of a regular rotation of crops, keeping the ground in grass for two or three years together. But I still suppose that among small allotment farmers, and those who occupy their glebe lands, there often occur reasons for not disturbing the old unbroken sward of favourite meadows. Still, half-an-acre, or from that to two acres of land, may be kept with great advantage under the plough and spade. Having studied a little treatise on Flemish Farming, recently published, and also Martin Doyle's excellent works, and having some personal experience of the matter, I am inclined to think spade labour and the plough are best combined. I have been accustomed to turn over such land frequently during the winter, working it in very narrow ridges; the alternate falls may, if needful, be afterwards deepened with a draining spade. The soil is thus thoroughly exposed during frost. I am not partial to heavy manuring, but to frequent manuring, and great variety of crops, clover or tares, early potatoes or cabbages, mangold wurtzel and turnips, carrots, parsnips, beans, winter potatoes, oats to cut for green food, peas and beans, onions, and indeed any ordinary crop of the kitchen garden may be cultivated in this way. If the pony be not strong enough for the place, a shilling or eighteen-pence will hire a neighbour's horse to help him; but I continually see ground turned over after once ploughing, and harrowed, and the rows prepared for early potatoes, with one horse and a light implement. I have done these things myself; though, no doubt, half-a-day's work at a time is enough from one horse, and two do the work better. The cottage gardener, however, need never send Caleb Balderstone a riding out for want of something else for his pony to do.

So much for exercise, until we begin to drive out for own enjoyment. One word here on feeding. The best receipt for condition, next to exercise, is a liberal allowance of corn, say eight or ten pounds of oats a-day (with carrots, and a little bran once a-week), in winter, and five or six pounds a-day in summer, when the pony is turned out at nights. On the contrary, as to hay, you can hardly be too stingy,

for pony is a gross feeder; will blow himself out if he can; and must not be allowed to gorge *ad libitum* during the day time. He likes a lump of salt always in his manger. He must learn to be moderate also in his drinking, except at night. He is very fond of soft water, and does not like that from a pump. In winter, many careful men have always a bucket of water before-hand in the stable, which takes off the extreme cold. A full-sized horse will dispose of a stone of oats a day when he is in full work, but he should have succulent food at the same time. In one word: oats save hay; oats save grooming; oats are the raw material of all good horse-flesh; oats give muscular power; oats add permanently to the value of the horse, bringing out and rounding off the form of the limbs and elevating the forehead. Peas, beans, Indian corn, and barley, may be, now and then, substituted for them with advantage. Two pounds of oats, or one feed extra per day, only comes to an extra shilling a week; the horse should improve to that extent in value by the year end; but whether that be the case or not, you ought to save that much in hay and in the superior quality of your manure. There is an ancient witticism in the facetiae of Hierocles about a man who was continually currying and brushing his horse, but who kept too tight a hand on the corn-chest. The steed saw through the humbug of the thing himself, and one day told his master that all the rubbing and scrubbing was to no purpose unless he got plenty of corn. The raciness of the joke, which must at one time have raised many a horse-laugh, has nearly passed away in the course of two thousand years; but the sense remains.

VIBGYOR.

TO CORRESPONDENTS.

BEE FLOWERS (W. L. T.).—*Salvia nemerosa* (of Sir W. Smith), and *Melilotus leucantha*, are the two best, but it is useless planting even these, except by the acre. The fields, and the fields alone, supply their store of honey.

DISEASED PEACH SHOOTS (A Thankful Reader).—Your Peach is, to all appearance, a case of badly-ripened wood, to which we have so frequently pointed. Probably your border is too rich, and your trees too flourishing; a common fault with beginners. Were they ours, and our opinion was confirmed on seeing them, we would open a trench and root-prune them. If, however, the trees are weakly, you must look to some other cause: we judge by the length of the joints. Our wood has three joints where your shoots have only two. There can be little doubt about the cause. Look back, and see what "your tutor" said about stopping all shoots at the end of August.

SNEEP (J. B. H.).—The cross-breed between the Welsh Sheep and Southdown would answer very well, but the best cross with the Welsh Sheep would be the Cheviot breed. The best age to put ewes to the ram is when they are about eighteen months old. Some breeds would begin breeding earlier, but without much advantage.—J. B.

DILWYNIA JUNIPERINA (H. S.).—Refer again to *The Cottage Gardeners' Dictionary*; you will not find any such thing as *Dionæa juniperina*. The piece of a plant you sent is not a *Dionæa* at all; it is *Dilwynia juniperina*, a greenhouse plant from New Holland. Your *Aechmeas* will produce suckers round the base of the old plant that has flowered, and you may please yourself whether you take them off and make new and more plants, or repot them and allow the suckers to remain. In the latter way you will have large plants that will produce as many spikes of flowers as there are suckers.

ORCHIDS (Ibid.).—You say you have cultivated—1, *Oncidium papilio*; 2, *Aerides odoratum*; 3, *Zygopetalum Mackai*; 4, *Dendrobium nobile*; 5, *Cattleya mossiae*; and, 6, *Stanhopea tigrina*, in a small mixed house, where the heat was only 45° at night for several weeks, and one week they were in a common greenhouse, the heat of which was frequently down to 40°, and they are now doing well. The *Oncid*, *Dendrobe*, and *Cattleya* are showing bloom; the *Dendrobe* has twenty-three blooms on it, and several are open now. You justly observe, this may be interesting to many readers of THE COTTAGE GARDENER. Your treatment amounts only to this, you have given them a severe rest, and we suppose have kept them dry in such a low temperature, and have them now in a warmer house, with more moisture, which has caused them to be doing well now, and flowering. It is, however, surprising that the *Aerides* has done so well with your treatment, as it is a native of the hottest part of India. You do not say whether it is thriving and flowering as the others are.

COW AND HENHOUSE COMBINED.—C. W. says,—"As some of your correspondents speak of the warming of poultry houses, I will mention a simple plan, which many probably might adopt, and which has answered well with me. I have a shippen with stalls for four cows, and as one or two of these were not used, I partitioned one off with some boarding, but chiefly with wire-work, so as to let the warmth from the cows have free access. This keeps up a more regular warmth than a stove, and is not dependent on any one's negligence. When the cows go out in the day-time it gets well ventilated, and in summer, when they sleep out altogether, it is perfectly cool. The wire-work admits plenty of light as well as air, and a door behind the cows provides easy access for its being cleaned out when the shippen is cleaned every morning. The ease of cleaning such places is a very important matter as regards the health of poultry. A small hole in the brickwork, near the ground, provides entrance and exit. My perches are made of boards, such as are now used for bed-bottoms, four or four-and-a-half inches wide, and an inch thick. So perching, the birds neither dirty themselves nor the perches,

and from the readiness with which they settle on them when going to roost, and select them in preference either to strong branches with the bark on, or to flat shelves or boards, I am inclined to think they are inferior to none. One of your correspondents stated, a little while ago, that old hens would not lay in the winter. With this arrangement, and no particular care as to feeding, three pullets and three old hens (Cochins) gave me about 280 eggs during the months of December and January, when I could buy none from the farmers around me. I should certainly advise any one building a shuppen to make a place for hens under the same roof.—C. W."

RELINQUISHING BEDDING PLANTS (*An old Sub.*).—We are very sorry to hear your tale, and no less so for not letting us know in time that we might advise you properly on your new plan, for at this late season to think of getting up lists and arranging herbaceous plants for doing credit to any one concerned is out of the question. If you were to plant all the best herbaceous plants to-morrow, nine-tenths of them would hardly recover the check of removal, dividing, carriage, and all that, before the August rains would ruin such of them as were then alive. We shall meet your case, however, before the next proper time of planting them.

WHITE FLOWERS (F. F.).—White *Campanula Carpatia*, White *Senecio*, White *Iny-leaved Geranium*, and the White *Variegated Alyssum*, are the best of the whites to match *Mont Blanc Verbenas*.

PRUNING OLD FRUIT TREES AND AZALEAS (A. G.).—All *Plum* and *Cherry* trees that are old and getting much worn out should be pruned during the latter half of September; the *Golden Pippin* the same; indeed, all such, whether stone-fruit or otherwise, ought to be pruned towards the end of September, while the leaf is yet green. "To what extent" should they be pruned, a conjurer could not tell till he saw them; but without conjuring, we would cut out a good deal of old wood from such trees. The pruning of *Chinese*, and all other *Azaleas*, should be done the moment they are out of blossom. It is now too late by far to plant *rock-work*, unless the plants are in pots, and if they are, those mentioned in our previous volumes are certainly the best; but in a large *rock-work*, all the *Saxifrages*, *Sedums*, *Irises*, *Veronicas*, and any of the low border plants will do, almost most annuals; and the best *rock-plant* we know is the *Eschscholtzia crocea*.

FLOWER GARDEN PLAN (*Anemone*).—THE COTTAGE GARDENER is much obliged to you for your pretty plan, which will be engraved forthwith. For 10, *Calceolaria amplexicaulis* would be as good as any, and for 14, there are several grey *Verbenas*, of which we prefer *Duchess de Nemours*. The rose-bed, we hope, is much higher in the centre, else the *Duchess of Sutherland* will overtop the *Geant des Batailles*. Pray drop 5, and plant it in 14 mixed, and repeat the colour of 10 in 5.

WALKING THROUGH A NURSERY.—A *Constant Reader* says:—"In walking through a nursery garden last summer, I copied, at random, the names on the labels attached to some of the flowers in the borders out-of-doors which attracted my attention, intending to purchase a few some day for my flower-garden. I am ignorant of many of them as to their being perennials or annuals, and shall be very much obliged if you will enlighten me on this point, and also if any of them are delicate or difficult of culture; they were all growing in the open borders when I saw them."—We recommend this hint to all whom it may concern. We ourselves learned more names than we can call to mind "walking through" nurseries and gardens. *Rudbeckia purpurea* and *major* are both hardy, tall growing plants that flower at the end of summer for a considerable time; they are very easy to grow, and can be divided at the roots once in two or three years, about the beginning or early in April; they should not stand nearer the walk than four feet. *Eurotia splendens* is a local name; but, as you like it, have it by all means; it will last a long time in flower, and is as easy to grow as a daisy, and almost as hardy, and very likely will seed with you. *Eurotia macrocarpa* is one of the very best bedding plants we have for those who can grow nothing but what is very hardy and easy to keep; it trails on the ground, flowers all the summer, the flowers are as large as a white Lily, and as yellow as a Crocus. It will not seed, nor divide at the roots; indeed, after once planting, it wants no more for twenty or thirty years. The way to increase it is by cuttings of the young shoots in May, when they are four inches long. The best time to plant it is in May, and it will flower the same season all through. *Chelone glabra* is a pretty herbaceous plant, two to three feet high in good soil. Use it in all respects like the *Rudbeckia*. *Lychnis dioica alba*: we wonder that you would choose this weedy plant; only a white variety of the common Catch-fly or Cuckoo-flower in all our hedges by the road-side; it grows as easily as anything. *Burgesia* is a very pretty flower, but that is only the second name—the first is *Lychnis*. It is a ticklish plant to keep, and is best kept as a biennial, from cuttings in the spring or in August. *Linaria Dalmatica*, a nice rock plant, but it will do in a border, and is hardy, and easy to keep after it is once established. *Veronica amethystina*: another rock or border plant, as hardy as a Dock, and as gay as a maid of honour, with its light blue flowers, while they last; it will divide early in April for increase. *Hemerocallis lancifolium* is very likely the tawny flowered species, and ought to be called *fulva*; it looks like a strong Lily, with flowers between yellow and foxy colour. It is a very good herbaceous plant, as hardy as an oak; it will grow anywhere, but best of all four feet from a walk. *Dianthus Altrinssonii* we know not by that name, but we know very well what is meant for all that. It is a very nice plant, with flowers something like an Indian Pink, and it requires exactly the same kind of soil, and cultivation, and propagation, as a very good horder Pink would.

FANCY GERANIUMS (*Ibid.*).—You cannot possibly get twelve "very nice" varieties of these without a good pull at the money bag; we hardly ever know the price at which such things can be had; and very likely, if we gave you a list, they would ask you from ten to forty shillings for each of them. The greatest battle we have to fight is to keep our friends from burning their fingers with lists—lists, lists, everybody wants a list; but who can give the prices. Three half-guineas is a poor price for a nice plant in a list.

WEIGHT OF BANTAMS (A. S. B.).—A Gold-laced Schright Bantam cock should not exceed 16, or at the most, 17 ozs.; while the hen should be limited to 14 ozs. The Silver-laced birds are usually somewhat larger, and difficulty is found in keeping them within this standard, which, however should not, in our opinion, be exceeded.—W.

NANKIN BANTAMS (P. R.).—The Nankin Bantams are rarely seen at

Poultry Exhibitions, having of late years been superseded by the gold-laced variety; consequently their proper markings and form have not been so carefully determined. The cocks vary in colour, many of them resembling a miniature Game-fowl; the hens are yellow, of greater or less brilliancy, irregularly spangled. The combs of both sexes are usually double, but small, and of a dull hue; feet and legs slate colour. These birds, however, have been so carelessly managed in most instances, that every possible diversity of colour and form may be noticed; but the lighter the body colour, and the more regular and distinct the markings, the higher should the bird possessing these points be estimated. We would fix the same limits to their weight as with the Laced Bantams, namely 16 ozs. for the cock, and 14 ozs. for the hen. The double comb we should always require.—W.

NEGLECTED GREENHOUSE (*Amicus florum*).—See the observations commenced to-day by Mr. Fish.

PELARGONIUMS (G. F. Lee).—We cannot recommend dealers.

OUR NINTH VOLUME (*St. Anne's Lodge*).—It is completed, and the Index, Title-page, and Preface, were given with our two last numbers.

DESTROYING SLUGS (*New Subscriber*).—Your garden being "over-run" with these marauders, you will find it no easy task to subdue them. Sprinkling lime over the surface very late during mild, moist evenings; putting heaps of fresh brewer's grains, and powdering lime on the slugs you find there early next morning; and having a few ducks to forage over your borders, are the best checks.

HEATING BOILER BY GAS-LIGHTS (*Grey Friars*).—The boiler is placed in a recess of the brickwork of the greenhouse, with an iron door in front of it and of the circle of gas jets. The pipes from and to the boiler may be built into the wall, so that the fumes given off by the burning gas cannot enter the house, but pass off into the open air through a pipe communicating with it. Another small opening beneath the iron door will be sufficient to admit air to support combustion in the flames. The bottom of the boiler is flat, and the jets of burning gas play against it. Any tinman could make it.


ROOKS (*A Constant Reader*).—We have replied, on more than one occasion, that no mode is known of enticing these birds to build in any desired tree.

LOOKING THROUGH A HEDGE (*Poor Man's Well-wisher*).—The best well-wisher for the poor that ever lived could not go the length of asking every one who built a house in sight of a public road or path to give away to poor men half of the land between the house and the road, on the sole condition of looking at them through the hedge. There would always be ten to one on the outside; and then ten to one that some one would just look at the looker-on. Try again, and suppose a house on one side of the road 150 feet above it, and a house on the opposite side considerably below it.

INDIA-RUBBER PLANT (*A Subscriber from the Commencement*).—This requires very little water from October to April, and less the colder it is kept; but if the plant is young, and there is not much store of its own milky juice, too much dryness at the roots would cause the young top to turn black; too much water at the roots, in a low temperature, would have exactly the same effect. No cold above absolute frost will kill this plant. Cut one joint below the black part, and look for the cause at the roots, and your plant will soon be all right again. Its beautiful shining leaves ought to be well washed, on both sides, with a sponge and soft warm water; and so ought every leaf of every India-rubber plant in this country that was subject to dust all this long dreary winter.

CONCRETE WALKS (J. R. C.).—In our next number we shall enter fully on this subject. You may cover your new *Asparagus-beds* all over with salt, so thick as to colour the ground; a much thicker coat of salt would hardly hurt this plant.

HYBRID FOWL.—J. H. N. says:—"Scrutator" is in error when he says that the bird exhibited at the Metropolitan Show was a hybrid between the pheasant and fowl. That bird was between the Golden and Common Pheasant, partaking entirely of the pheasant character, with the voice of the Golden Pheasant, whereas the hybrids between the pheasant and fowl partake of the character of both, and are far from handsome. As 'Upwards and Onwards,' at page 470, still seems to doubt the actual existence of the hybrid between the pheasant and fowl, if he will forward me his address through the Editor, I will inform him where he may see some, and believe, if he does not object to a two hour's trip from London, by rail, and by extending his journey another hour, he may see the hybrid Pheasant exhibited at the Metropolitan Show."

TRICHOMANES SPECIOSA CULTURE.—*Fernatum* obliges us as follows:—"The *Trichomanes speciosa* I grow in a small case by itself; the ends, sides, and bottom all zinc; only the top, which is this shape , of glass, stationary at one side, and the other divided into two panes, both of which move horizontally in a groove, which keep it tight, and less liable to damage if wanted to remain open occasionally. The plant is laid on some good peat, about one-and-a-half-inch deep, under which some moss is laid to prevent the stuff passing through the holes in the bottom, and to serve as drainage. The case is twenty-four inches by fourteen, and fourteen inches high in the centre, and is placed in a shaded part of the greenhouse, as light is injurious to it and the *Hymenophyllum*. I have watered it but once since it was placed in the case last July, and now it is throwing up new fronds, of a fine delicate green, quite transparent. The difficulty in growing it arises from its being covered too deep, and, as it is of slow growth, it should not be disturbed. I have seen plants that are potted for more than twelve months, and only now seem to be growing. Its natural position is a shallow, rich, peaty soil, under shade. The *Hymenophyllum Wilsonii* I grow best in a large pot (10-inch), with good drainage of potsherds half-way up, and about two inches of broken pieces of charcoal, and on the top sandy peat, on which are placed the delicate racemes, pegged down—covered close with a hand-glass, and kept moist, in the shade. I understand, if it be placed on coarse sandstone, with a little soil on it, and covered with a cap glass, it will succeed well. I cannot vouch for this, not having seen it tried. I fear it would not do well in my large case, as it is too much lighted."

WEEKLY CALENDAR.

M D	W D	APRIL 28—MAY 4, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In						
28	Th	Scalloped Hazel ; wood sides.	30.156 — 29.964	64—44	S.W.	32	39 a. 4	16 a. 7	0 39	20	2 39	118
29	F	Beautiful Crescent ; hedges.	29.820 — 29.748	61—50	S.W.	18	37	17	1 36	21	2 48	119
30	S	Yellow-stigmaed Grey.	29.600 — 29.546	66—44	W.	—	36	19	2 17	22	2 56	120
1	SUN	ROG. SUN., ST. PH. & JAS. PRINCE	29.873 — 29.729	57—34	N.	—	34	20	2 47	23	3 4	121
2	M	[ARTHUR B. 1850.	30.082 — 29.780	51—25	N.E.	01	32	22	3 10	24	3 11	122
3	Tu	Dingy Skippers ; dry l.	30.171 — 30.101	57—28	N.E.	—	30	24	3 29	25	3 18	123
4	W	Pebble Prominent ; trees.	30.190 — 30.162	56—27	N.E.	—	28	25	3 46	26	3 24	124

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 62.6°, and 40.5° respectively. The greatest heat, 81°, occurred on the 28th in 1840 ; and the lowest cold, 26°, on the 30th in 1845. During the period 109 days were fine, and on 73 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 473, Vol. ix.)

NATURAL ORDER. FUMEWORTS. (FUMARIACEÆ.)

CHARACTERS.—*Sepals* two, deciduous. *Petals* four, cruciate (that is like a Maltese cross), parallel ; the two outer, either one or both, having a bag at the base ; the two inner hardened and coloured at the apex, where they cohere and enclose the anthers and stigma. *Stamens* six, in two parcels, opposite the outer petals ; *anthers* membranous, all two-celled, except when unfertile. *Ovarium* above the petals, one-celled ; *ovula* horizontal ; *style* thread-like ; *stigma* with two or more points. *Fruit* various ; either a not-opening one or two-seeded nut, or a two-valved many-seeded pod. *Seeds* horizontal, shining, with an arillus (or substance adhering to the seed). *Albumen* fleshy. *Embryo* minute, out of the axis ; in the not-opening fruit straight ; in those which do open, somewhat bent like a bow.

CORYDALIS.



GENERIC CHARACTER.—*Petals* four, the upper having a spur at the base ; sometimes all are joined at the base ; sometimes with the lower one free, and the others joined, but when they begin to decay they all become free and deciduous. *Stamens* (diadelphous) in two groups. *Capsules* two-valved, flattened, oblong-oval, or narrow and parallel-sided, many seeded. *Herbage* smooth, usually milky-green, with three-leafleted, or deeply-cut leaves. *Flowers* in racemes (clusters) at the end of the stem, or opposite a leaf, with a bract under each flower's stalk.

CORYDALIS BULBOSA: Bulbous-rooted Corydalis ; Solid bulbous Fumitory.

Description.—It is a perennial. *Root* globular, depressed, of several fleshy coats, but not hollow. *Stem* solitary, erect, smooth, a little zigzag, angular, leafy, almost always simple, about eight inches high, with a lance-like sheath or two near the bottom. *Leaves* two or three, scattered, on channelled foot-stalks, twice three-leafleted, notched, milky. *Cluster* terminal, solitary, erect, of from ten to fifteen variegated, purplish, inodorous flowers, each with a long ascending, blunt spur, and a slight pale prominence at the upper side. *Bractes* wedge shaped, hand-like, five-cleft, milky-green, solitary at the base of each partial stalk, which they exceed a little in length. *Calyx* very minute, rounded. *Pod* short, oblong-egg-shaped, bursting at the base. *Seeds* several, round, and black.

Time of flowering.—April and May.

Places where found.—Rare. In groves and thickets at Levans Park, and Wattsfield, near Kendal ; near Ulverstone ; at Perry Park, near Birmingham ; at Blithfield, in Staffordshire ; Wickham, Hants ; Studley, Warwickshire ; and Abberley Woods, Worcestershire.

History.—In the time of Linnaeus it was unknown as a native of England, at which he expressed surprise, as it is found in most parts of Europe from Sweden to Italy. The genus belongs to Diadelphia Hexandria of that naturalist's system. It has had many names among botanists. It was first called *Radix cava*, or Hollow-root, because the bulbs of one of its varieties are hollow ; *Pseudo-Fumaria*, because it differs from *Fumaria*, with which genus some botanists united it under the name of *Fumaria bulbosa*, *F. cava*, *F. digitata*, *F. minor*, *F. solida*, and *Pistolochia*. It has also been called *Corydalis digitata*, and *C. densiflora*. The flowers are sometimes blush-coloured, sometimes green, and sometimes white. Miller considered the hollow-rooted and the solid-rooted are distinct species. (Lindley. Donn. Smith. Martyn. Withering.)

WE are induced, once more, to give the receipt for making concrete roads and walks. The short paragraph in "The Dictionary" on the subject is not very clear, and it has been misunderstood, and no wonder, when we consider the old prejudice in favour of deep roads and deep walks. It was only the other day that we inquired of a practical road-maker, what he considered to be the best and safest depth for a road, on light sandy soil ? After a little mental calculation, he answered, that one could hardly be safe under twenty-two inches in depth. After that we had to attend a

vestry meeting about roads, which are managed by a "board" of seven able and willing parishioners. The head man of this board appeared to me to be a very good business man, and he was certainly a very good speaker. He had every item in black and white, and his papers were as well arranged, with reference to his able speech, as a Chancellor of the Exchequer could wish for on the evening of a budget. In giving an account of the stewardship of the road funds, he enumerated all the ins and outs to which they were liable and exposed, and, among other items, he mentioned the

many new roads there were in the district, and that a "*new road could not be considered finished and fit for work under three years.*" These were the very words he made use of, for a short-hand note was taken of them.

Here, then, are the extremes of the old prejudices in regard to new roads. Most people will allow twelve inches to the depth of a road, and twelve months to settle before they consider it "finished and fit for work." The surveyor of the roads in the counties of Suffolk and Norfolk has a different way of making new roads; and after an experience of twenty-three years, he taught us the art and mystery of making roads only six inches in depth, and to be in a fit state and condition, in three weeks, for carrying loads of five or six tons in carts, or waggons, with narrow wheels, without any more damage to the surface of the road than a wheelbarrow would make on a good garden walk. We have helped to make such a road, and double that stress was laid upon it, or ten tons in a load, more than once, before it was two months old, and it never flinched in the least degree. The Messrs. Lucas, Brothers, the large building firm in London and Norfolk, were the parties who tried this road to this extent, with huge blocks of Caen stone, and Sir Charles Barry saw the whole from beginning to end. It strikes us very forcibly, that it would be a great saving of road money, or rates, in many places round London—or, indeed, round any place in England—if the people would employ the Messrs. Lucas to make the new roads, or reconstruct the old ones, on the concrete system. They can get plenty of Kent or Essex chalk, and Aberdeen or Australian granite—the latter the cheapest of the two—from the ballast of the return vessels in the port of London, to make roads as hard and as durable as pitched or paved roads, and, in some instances, cheaper than with Wimbledon gravel. Indeed, we are told that part of the old town of Kingston is Macadamized with Australian granite, at a cheaper figure than it could be done with the best gravel only five miles off.

For those who put faith in THE COTTAGE GARDENER, it will only be necessary to say, that the Editor has pledged his word that these concrete walks are the best he ever saw; his very words in the "Dictionary" are, "from personal inspection, we can say these are the best we ever saw."

Late in March, all through April and May, is the best time to make concrete walks; four inches, or at most five inches is deep enough for any walk whatever. If it is to be ten feet wide, and the materials are scarce, or dear, the bottom should be formed into the same shape as the walk is to be finished, or, say two inches higher in the middle than at the sides, before any of the materials are laid on. The old way of draining the centre of a walk, by drawing in the water from right and left, is radically bad in principle, and will not answer the concrete system at all, as the dryer the bottom, the firmer the walk, and the longer it will endure. On very heavy clay land, where chalk and gravel are dear, burnt clay will make an excellent and enduring bottom to a walk, and three inches of the burnt clay should first of all be put

in the bottom and be well rolled in dry weather, then two inches of the concrete on the top, this to be well rolled also, and to be heavily watered the last thing in the evening, then, the following morning, a *very thin* layer of fine sifted gravel, of good colour, should be laid on the top of the damp concrete, and the roller passed over it several times until the good gravel is thoroughly imbedded in the concrete, and forms part of it, as it were; when the concrete is very wet, and the good gravel over it too thinly put on, the weight of the roller will cause the white juice of the concrete to come up through the gravel, and that is the best sign. To hide that, put on a little more gravel, and roll again, and when the whole is dry, in two or three days, a pick could hardly break the surface.

On light, dry lands, four inches is deep enough for walks, and the first two inches at the bottom may be laid with any of the rough materials, without chalk or lime, and the next two inches in concrete. The roller will press this sufficiently to allow a slight coat of clean good gravel on the top, without the walk being more than four inches deep in the whole.

The concrete is made with any coarse gravel, with the largest stones taken out or broken, five parts or loads, and one part of fine chalk, all mixed well together, and put on the walk, then well watered. In dry weather, this is soon dry enough for the roller. The usual way is to begin this in the morning, and water every three or four yards in length as soon as the mixture is got in, and so on till towards four o'clock in the afternoon, when the whole is ready for the roller, or if it is not dry enough that day, to keep on till six o'clock, and roll it the first thing next morning, and then to put the fine gravel on and roll again immediately; if the concrete is too wet it will stick to the roller, and after rolling, if it is allowed to get dry before the colouring gravel is put on, the fine gravel will not stick to the concrete, so that the state of the weather has much to do with the perfect success of the operation, and wet weather is much against it.

We calculate, generally, that one part, or load, or bushel of lime, will go as far in concrete as two parts of chalk; then, instead of five of gravel to one of chalk, we allow ten of gravel to one of lime, but that is the extreme; when lime or chalk is to be had cheap, more of both should be used than these proportions. We have used as much chalk as one part for three parts of gravel; and one of the best walks we ever saw had more than a yard deep of clean chalk in the bottom, because the chalk was at hand, and the bottom soil was more useful in filling up round about—and on the top of the chalk less than two inches of the concrete. In all such cases, however, the first frost next autumn blistered the chalk, and caused it to rise through the surface in icicles; but after the frost, when the walk got dry, the roller settled the whole down again, and after that, we never knew the frost to affect it any more. The same blistering takes place when the concrete is made too fat, as they say, that is, when too much chalk or lime was used for the proportion of gravel. In such cases it was found

necessary to sprinkle the surface with fresh gravel when all the frost for that season was over.

In all this we are only answering questions on the subject, and have met all but the last question that we remember, and that is about freshening up concrete walks. When the surface of a concrete walk gets bare of fine gravel by long usage, or much sweeping, it turns to a light colour. Again, when a concrete walk is in a part where it is liable to get dirty on the top in winter, and it is necessary to scrape off the dirty surface in the spring, it will not do to lay a very thin coat of fresh gravel on the top. If the bottom is dry at the time, one might as well think of getting Scotch snuff to stick to an English pavement, as to do that. The concrete bottom must be thoroughly wetted, so that a finger could mark it, then the fresh gravel, and immediately the roller; and the whole will unite, and soon be as hard as a concrete walk. Once more—if a thunderbolt falls, and makes a hole or great scratch in the surface of a concrete walk, one must not expect to mend it with so much gravel, let it be ever so good. Clear away the sides till all loose particles are got rid of, then put down four parts of gravel and one part of chalk, and work them with water to a stiff paste or mortar, and fill up with this—smoothing the top with the back of the spade; then sweep as much from the walk as will cover the patch, strike the back of the spade on this, and no one can perceive the difference. D. B.

At this grass-sowing season our readers will be benefited by our introducing to them a safe guide in selecting seeds for their soil and purpose. There was a day when the cultivator of the soil contentedly sowed the sweepings of a hay-loft, without enquiring, or even thinking, whether the seeds thus mixed with rubbish were ripe; whether they came from a soil similar to his own; or whether they were not more seeds of weeds than of grasses. Such rude practice is now at an end, and is justly looked back upon as fitly classed with such barbarisms as tying horses to the plough by their tails. Among those who have aided to bring about a correct culture of the Grasses, are Messrs. Gibbs and Co., of London, Messrs. Sutton and Co., of Reading, and Messrs. Peter Lawson and Son, of Edinburgh. The latter are the seedsmen and nurserymen to the Highland and Agricultural Society of Scotland, and have published a thin quarto volume on the subject, entitled *Agrostographia, a treatise on the cultivated grasses and other herbage and forage plants*. The fourth edition, greatly improved, is now before us, and we strongly recommend it to our readers. It is not only a sound practical guide to any one desiring to know what grass seeds to sow upon his soil; and how much of each species he should employ; but he will find truthful and copious particulars relative to the nutritive and other qualities of each. The following extract will be sufficient evidence that there is amusement as well as instruction in the volume:—

“In England, while hemp, flax, hops, and buckwheat, in

addition to common wheat, rye, and barley, were, in the sixteenth century, reckoned common crops; yet the cultivation of forage or herbage plants was only commenced about the middle of the seventeenth century, with the exception of summer and winter tares or vetches, which are mentioned by the earliest writers on agriculture. John Gerarde, the famous herbalist, surgeon and traveller, of the days of Queen Elizabeth, states, in his ‘General History of Plants,’ published in 1597, that ‘the red clover was sown in the fields of the Low Countries, in Italy, and divers other places beyond the seas,’ but makes no mention of it being then known in England; and Sir Richard Weston, who, in 1645, published his ‘Travels in Flanders,’ mentions that, in the preceding year, he saw a crop of it cut three times in the course of the summer, in the vicinity of Antwerp; and immediately thereafter, seeds of the ‘Great Clover of Flanders’ were advertised ‘to be had at the shop of James Long, at the Barge on Billingsgate.’ In 1653, Walter Blyth, an agricultural writer, was the first to publish particular directions as to its culture; so that the merit of its primary introduction to England is generally ascribed to Sir Richard Weston, who is also believed to have first introduced, from the same country, the field culture of turnips, on his return in 1645. Sainfoin, or, as it was first named, French finger-grass, seems to have been introduced from France in 1651. According to Miller, author of the ‘Gardener’s Dictionary,’ lucern was also brought to England, from the same country, in 1657. Hartlib, in his ‘Complete Husbandman,’ published in 1659, recommends the sowing of nonsuch or yellow clover, under the name of hop-trefoil, from having seen a chalky down in Kent, without any other than a scanty vegetation of this plant, ‘maintaining many great sheep and very lusty, so that they were even fit for the butcher.’

“The seventeenth century is further distinguished in the annals of husbandry, by the first cultivation of any of the true grasses for hay or pasture, which is thus recorded in Dr. Plot’s ‘Oxfordshire,’ published in 1677: ‘They have lately sown ray-grass, or the *Gramen loliaceum*, by which they improve any cold, sour, clay-weeping ground, for which it is best, but good also for drier upland grounds, especially light, stony, or sandy land, which is unfit for sainfoin. It was first sown in the chiltern parts of Oxfordshire, and since brought nearer Oxford by one Eustace, an ingenious husbandman of Islip, who, though at first laughed at, has since been followed even by those very persons that scorned his experiments.’ Succeeding writers, however, do not fail to condemn the rye-grass as an impoverisher of the soil, while they affirm that its hay is not to be compared to that of clover or sainfoin; the former of which seems alone to have had any particular attention bestowed upon it till the following century. Ray, in his ‘History of Plants,’ published in 1688, mentions that the yellow melilot was then sometimes sown for the food of kine and horses; but succeeding writers generally include it among agricultural weeds. And lucern, although introduced, was scarcely, if at all, subjected to field-culture prior to the seventeenth century.

“Mr. Lisle, author of ‘Observations on Husbandry,’ written in 1707, states ‘that, then, clover was commonly cultivated in Wiltshire, Hampshire, Gloucestershire, Leicestershire, &c.; also, that of late years the cow-grass had obtained some credit as a longer-lived sort than the common clover;’ and he further mentions that a neighbour in Hampshire had ‘sowed the wild white clover which holds the ground and decays not,’ the seeds of which he received from Sussex, where its culture was then practised. Mortimer, who, 1721, published his ‘Whole Art of Husbandry,’ relates that ‘in Buckinghamshire they make great improvement of their lands by sowing them with parsley, which prevents the rot of sheep;’ and that ‘one in the hundreds of Essex made a great improvement of some land by sowing of it with mustard-seed, for the same purpose.’

“The next novelty in English field-culture seems to have been the whin, as appears by a letter from Colonel Charles Cathcart, to the Scottish Society for Improving in the Knowledge of Agriculture, dated London, 6th April, 1725, in which he mentions that ‘the sowing of whins for feeding of cattle takes mightily about London now;’ and that ‘this improvement comes from Wales, where it has been

practised these hundred years.' In 1744, William Ellis, a Herefordshire farmer, published his 'Modern Husbandman,' in which he claims the merit of introducing the culture of the wild 'thetch-grass,' or mouse-tare, and the 'lady finger-grass,' or bird's-foot trefoil, which he 'affirms for truth are the two best sorts of natural meadow-grasses that are for feeding and fattening of conies, deer, race-horses, or any other sort of cattle that will eat them in grass or hay;' and adds, that 'if gentlemen knew the value of them they would have no occasion for searching after a foreign spurry seed, which I have experienced exceeds all others for its worthless nature,' from which, and other passages, it appears that the culture of spurry was introduced from Holland about 1740. And the same author mentions, that he 'had heard of a gentleman in a distant country who had sowed the plantain-seed,' or rib-grass, but was unable to state the results; which seems the first notice taken by English writers of a plant, that afterwards received much more attention, than, in the present opinion of agriculturists, its merits ever deserved. In the 'Farmer's Complete Guide,' published in 1760, attention is directed to the 'new lucerne,' or sickle-podded medick, which the writer states to be 'a native of Herefordshire, and the adjoining counties, but where it is by no means common;' and further adds, that 'the Swedes derive great advantages from its culture.' Succeeding authors relate that burnet was first grown as a field plant in 1760, or 1761, by Mr. B. Rocque, of Walham Green, at the suggestion of Mr. Peter Wyche, to whom belongs the merit of introducing from America, about that time, the timothy-grass, first so named in Carolina, from having been taken to that State by a Mr. Timothy Hanson; from which country the culture of the orchard-grass, or cocks-foot, was also introduced shortly afterwards; the same Mr. Rocque having grown it in 1764.

"From the preceding, it will be observed with what avidity the earlier cultivators sought our herbage and forage 'grasses,' as they termed them, among the leguminosæ and other corollaceous plants, and with what seeming care they eschewed the true grasses; their often-repeated reason for which was, that 'these produced many small hair-like roots which filled the soil, and, therefore, could not be but very impoverishing and hurtful thereto;' without considering that the then very common practice of cropping a field, as long as it would recompense their labours, and afterwards letting it alone for some years to recover under a crop of unsown grass, was of itself a perfect contradiction to their false theory.

"As an approximation, however, to a more improved system, some recommended sowing, for permanent pasture, seeds shaken out of the best natural meadow-hay, along with the clovers; without considering that, as the different species composing such hay did not ripen their seeds simultaneously, only a partial reproduction of these species could be expected. But the recommendations of Stillingfleet, in 1759, and others immediately thereafter, to cultivate certain of the most useful grasses, as the crested dog's-tail, sweet vernal, meadow fox-tail, meadow fescue, sheep's fescue, rough and smoothed-stalked meadow-grasses, &c., by growing their seeds separately; and the successful introduction from America of the Timothy and cocksfoot, directed the attention of practical agriculturists to a new source whence to procure a further accession to their hay and pasture plants; and likewise suggested to agricultural writers the expediency of adopting different terms to distinguish between the clovers and true grasses. Accordingly, we find that, after that period, they generally denominate the former *artificial grasses*, and the latter *natural grasses*.

"In 1761, Mr. Aldworth, of Stanslake, collected, at the suggestion of Mr. Stillingfleet, fully a bushel of the seed of the crested dog's-tail grass; and that author mentions having himself 'procured a sufficiency of the same seed, as well as that of the creeping-bent, fine bent, sheep's fescue, &c., to begin a stock with.' In the same year, the broad-leaved everlasting pea, was grown by a gentleman who, in the 'Museum Rusticum,' published in 1765, states that he then sowed a rood of it, 'which yielded a great deal of feed much relished, both in a green and dried state, by horses and cattle.' In 1766, a prize of £5 was awarded by the London Society for the Encouragement of Arts, Manufactures, and Commerce, to Mr. W. Judge, Woodford,

Essex, 'for gathering by the hand the seeds of meadow fox-tail grass;' as also £5 and £3 3s. to Mr. E. Birch, Somerset, and William Gosse, Hants, for collecting, in like manner, the seeds of crested dog's-tail grass; and in the following year Mr. Gosse received two further premiums for gathering seeds of the meadow fescue and sweet vernal grasses. The same Society, in 1768, offered a premium of £10 'for the greatest quantity of land (not less than one acre) of vernal grass-seed, sown in drills;' and their gold medal was further offered, in 1769, 'to the person who should give the most satisfactory account of the different properties and comparative value of any two or more of the several natural grasses.'

"By earlier authors, yarrow or milfoil was generally included among pernicious weeds; but a writer in the 'De Re Rustica,' published in 1769, strongly recommends the sowing of it in sheep pastures. About 1780, Mr. Boys, a farmer of high reputation in Kent, commenced the culture of the rough-stalked meadow-grass; having had, in 1785, from twenty to thirty bushels of its seed for sale, which he offered at 3s. per pound; but was obliged to drop its culture from want of demand. Marshall, in his 'Rural Economy of Yorkshire,' published in 1788, states, that 'white or meadow soft grass,' now better known by the name of Yorkshire fog, 'was formerly in high esteem, being cultivated separately, and thrashed like corn for its seeds; but it was far from being an eligible grass for cultivation, the growers of the seeds being the only persons who profit thereby, eighty bushels per acre having been produced.' At what period it may have been first cultivated is not recorded. In the last quarter of the same century, the only other introduction of importance seems to have been the chicory or succory from France, in 1788, by Arthur Young; for though the further cultivation of the natural grasses was strenuously advocated by many able authors, as Curtis, Lord Kames, Dr. Anderson, Martin, and Nodder, in their 'Flora Rustica,' and Young, as well as by contributors to agricultural periodicals, yet comparatively little attention seems to have been bestowed on testing their actual merits by field culture.

"The hard fescue and smoothed-stalked meadow-grasses, if not cultivated before the end of the eighteenth century, appear at least to have had a little attention bestowed upon them very early in the present, although the exact period, or by whom, has not been ascertained. In 1807, Dr. Richardson, of Portrush, Ireland, created a considerable sensation among agriculturists, by the introduction of his famous florin grass, which was cultivated more than forty years before by Stillingfleet, who, in succeeding works of his, endeavoured to impress upon growers the advantage of cultivating it along with the 'float fescue, on moist meadow lands,' seemingly, however, with very little effect; so that to Dr. Richardson belongs the merit of first acquiring for the florin a fair and general trial. About 1820, an extensive set of experiments with grasses, including many exotic as well as native sorts not previously cultivated, was instituted at Woburn Abbey, under the direction of the late Duke of Bedford, the results of which are recorded by the late Mr. George Sinclair, then gardener to his Grace, in his invaluable 'Hortus Gramineus Woburnensis,' which work may justly be said to have first directed that general attention to the cultivation of useful grasses, so long and unaccountably withheld.

"In 1821, the crimson clover was brought into notice by the late Sir John Sinclair, Bart., and grown in Berwickshire that same year: three years afterwards it was introduced to England, on a much more extended scale, by Mr. John Ellman, jun., of Southover, near Leeds. Mr. Elles, of Longleat, in 1826, recommended, from experience, the cultivation of the day-lily, as a grateful and early spring food for milk cows. And in 1830, Mr. Grant, nurseryman at Lewisham, advertised the rough and prickly comfrey, which he had discovered to be an agreeable, fast-growing, and nutritious food for both cattle and horses. In 1831, we first introduced the Italian rye-grass, from Hamburg, and that same year Mr. Thomson, of Banchoory, also brought home a few seeds of it from Munich. The late George Stephens, land drainer, Edinburgh, introduced the Alsike clover from Sweden in 1834; and in the same year the villous annual vetch was brought into notice, and recommended as a winter tare, by Mr. A. Gorrie, Anuat, Perth-

shire, who discovered its seeds in a cargo of Dantzic wheat. In 1835, Mr. Smith, at Ayr, brought the Siberian cow-parsnip under the notice of the Highland and Agricultural Society of Scotland, as a productive and early spring food for cattle. The blackish-headed fox-tail-grass was first recommended in 1839, by a writer in Loudon's 'Gardener's Magazine;' and in 1840, the wood-millet, or pheasant-grass (a species seemingly destined, when its merits become more generally known, and its culture better understood, to form an important feature in woodlands), was introduced to cultivation by Mr. A. Gorrie.

"In 1843, the Tussock-grass of the Falkland Islands attracted considerable attention. This gigantic product of these ungenial regions was especially recommended for trial on the northern and western coasts and islands of Scotland and Ireland. It was observed, in 1842, growing luxuriantly, on peaty, seaward exposures, by the botanist to the Antarctic Expedition, Dr. J. D. Hooker (son of Sir William Hooker, Director of the Royal Botanic Gardens at Kew), to whom is due the merit of its introduction to Europe.

"In 1848, we procured from Mr. Cunningham, Comely Bank, some plants of the Pampas grass, described by Humboldt in the 'Nova Genera et Species Plantarum.' It is a strong coarse grass, growing in large tufts or tussocks, with leaves from eight to ten feet in length. As a feeding plant it is of no value, but as a fixer of loose sand-banks, or on the margins of rivers, it will probably prove useful; while its quick growth and hardy nature point it out as an excellent cover for game.

"Numerous additional species of grasses and other herbage plants have been brought into cultivation within the last twenty or thirty years, which are not included in the preceding enumeration, from the dates not having been ascertained. Of these may be mentioned wood meadow-grass, nerved-seeded meadow-grass, various-leaved and darnel-spiked fescue-grasses, float-fescue or floating sweet-grass, hill-mustard, Moliner's clover, &c.

"The repeated saving of rye-grass seeds from first crops by the earlier growers, resulted, towards the end of the last century, in the prevalence of a short-lived variety, afterwards termed Annual Rye-grass, and unfit, in many cases, for the laying down of land to two or more years' pasture; which naturally directed attention to the selection of a more lasting variety. Accordingly, we find that this desideratum was then supplied by Mr. Pacey, of North Leach, Wiltshire, whose perennial rye-grass, as it is still called, soon became known throughout both Scotland and England. Mr. Pacey's example was followed by many other cultivators, each of whom discovered, or fancied he had discovered, a variety possessing new or additional merits, so that, prior to the publication of the 'Hortus Gramineus Woburnensis' in 1824, Dickson's, Ruck's, Russel's, Stickney's, Whitworth's, &c., had been introduced. Since that period, names of many other particular growers have been added to the list; so that it now requires no little discrimination to fix on what are really the most deserving of cultivation. About 1830, Mr. T. Bishop, at Methven Castle, Perthshire, brought out an evergreen variety of the wood meadow-grass, and a long-leaved, deep-rooted variety of the hard fescue, both of which he selected, in 1826, from observing the peculiar manner in which they withstood the severe drought of that summer; and the same cultivator has since brought into notice three other varieties of the hard fescue, viz., an early, a large purplish, and a large saw-leaved sort. In 1833, we introduced from France the double yielding sainfoin, a very luxuriant growing variety. In 1834, Mr. Gorrie, at Annat, discovered a fertile-seeded variety of the tall fescue-grass, which he has since continued to propagate; and in 1840, we brought from Hamburgh a tall-growing or gigantic variety of the same plant. The tree clover from Bokhara, a tall variety of white melilot, which attains a height of from ten to sixteen feet, created a little sensation in 1839, when first brought to this country, and still continues to be an object of attraction. In the following year, a very early but rather dwarf-growing variety of lucern from Affghanistan, was received through the East India Company; and in 1841, we introduced from Hamburgh two strong-growing grasses, the one a variety of cocksfoot, and the other of the wood meadow-grass. In the same year, we received from the Botanic Gardens of Berlin, seeds of a

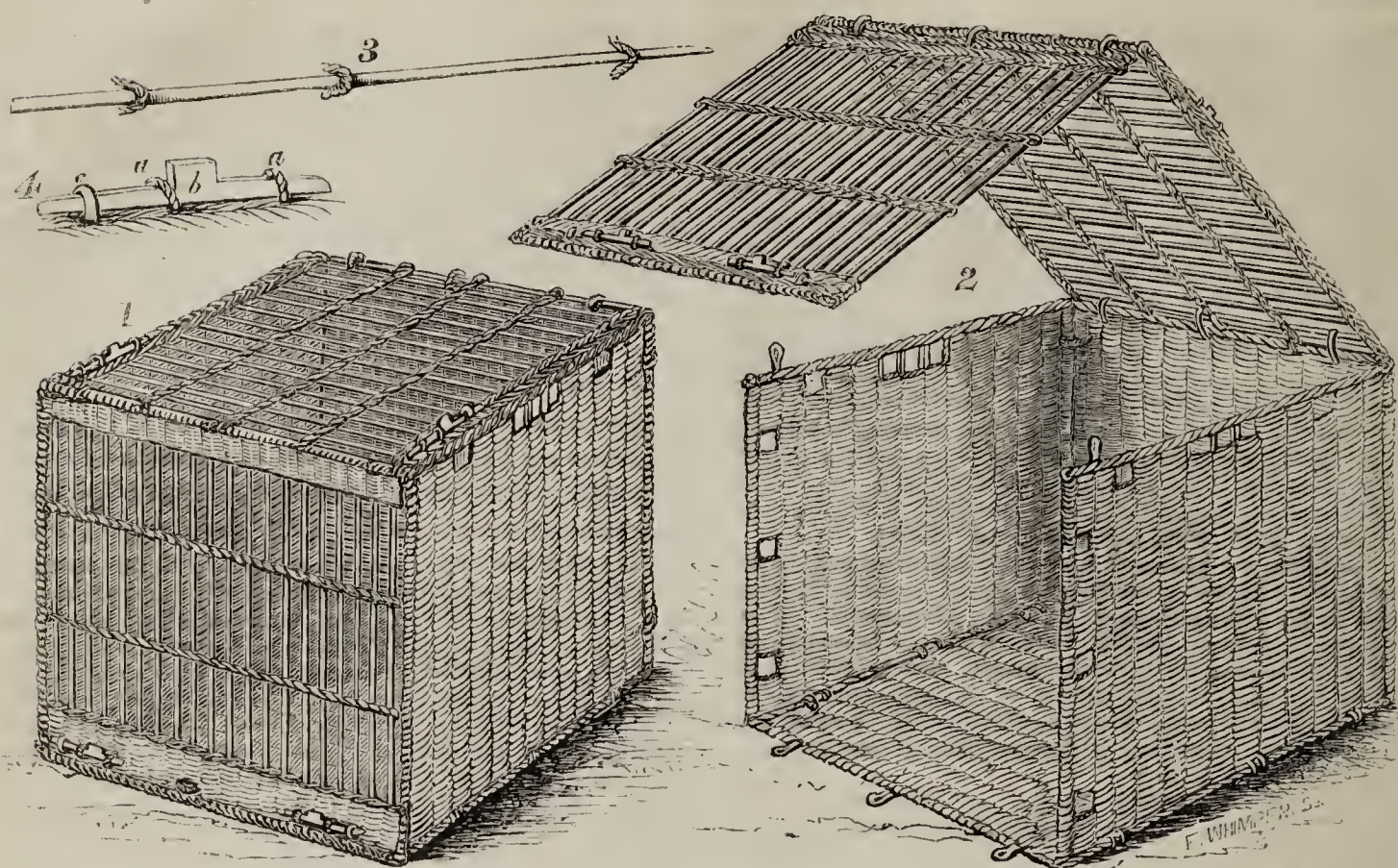
very succulent and rapid-growing grass, under the name of *Bromus Schraderi*, which, on first trial, seemed to be possessed of highly important qualities, but was found too tender for the severe winter of 1844-45. In 1844, the bulbous barley-grass was noticed in the 'Bon Jardinier' as being naturally well adapted for chalky and other dry calcareous soils, and has since been found to succeed on such in the south of England; for which localities the villous wheat-grass was also recommended about the same time; but being of diminutive growth, and only of biennial duration, its culture has not been attended with equal success."

It is not often that a *Chancellor of the Exchequer's Budget* contains subjects for quotation in our pages, but there are some remissions of duties in that just laid before the House that deserve a prominent notice, and for this purpose we may as well quote the paragraph entire.

"We have been desirous of lowering the duties that press on foreign articles of food, which enter largely, if not into the necessities of life, at any rate into the solace and comfort of the people. Therefore, first, as to articles of food, we propose to lower the duty on a number of articles, of which the principal are as follows:—*Apples*, from 2s. a bushel to 3d.; *Cheese*, from 5s. to 2s. 6d. per cwt.; *Nuts*, from 2s. to 1s. per bushel; *Eggs*, from 10d. to 4d. per 120; *Oranges and Lemons*, to 8d. per bushel; *Butter*, from 10s. to 5s. per cwt. *Chicory*, to 6d. per lb.; *Onions*, 1d. per bushel; *Pears*, 3d. per bushel; *Walnuts*, 1s. per bushel, and all other *Fruit*, not otherwise enumerated, 2d. per bushel."

The prices of *Poultry* are rising rather than decreasing; and the increase extends to all the varieties. At the periodical sale at Mr. Stevens's on the 19th, the only feature worth notice was Lot 41. This was a pen of six *Shanghae chickens*, hatched in January, and these youngsters sold for £11. The demand for these is great, on account of the very early sittings having proved very unfortunate; indeed, so great is it, that we have sold sixteen *Shanghae chickens* six weeks old for £16.

At the sale of Mr. Fox's supernumary stock, by Mr. Stafford, on the 14th instant, the prices were quite as large as heretofore. Of *Shanghaes*, 135 lots realised £640 17s. 6d., of which we can particularise only a few. Lot 27, silver cinnamon hen, sister to Mr. George's prize hen at the Great Metropolitan Exhibition, £15 15s. Lot 38, lemon hen, £13 10s. Lot 40, cock, pure lemon-colour, bred by Mr. Andrews, took second prize at the Great Metropolitan Exhibition, £27. Lot 48, imported hen, taken many prizes, being Mr. Andrews' celebrated bird, £19 19s.; and Lot 45, buff cock "Nelson," weighed lately 13lbs., shown by Mr. Potts, taking four prizes at Bristol, Metropolitan, Torquay, and Reigate Shows, as well as the champion cup at Torquay, £43. This bird has passed into the hands of Mr. Sturgeon, and we know that a nobleman has since offered £50 for him. The *Spanish* were good, but not first-class birds. There were twenty-four, and they sold for £105 13s. Lot 139, a hen, took a prize at the Metropolitan Show, £11. Lot 153, a cock, £12. Of *Polands*, fifteen were sold for £17. Lot 160, silver-spangled cock, with ruff and beard, took first prize at the Metropolitan, £1 10s. Lot 166, silver-spangled hen, with ruff and beard, £2 5s. Eight *Dorkings* sold for £8 12s. Altogether 182 lots were sold, and the gross prices amounted to £774 11s.



THE above represents a *Poultry Basket or Pen*, invented by Jonathan Gray, Esq., of Bathwick, near Bath, and intended by that gentleman as a model which might be adopted were the double purpose desirable to be combined of a basket in which the birds might travel to a show, and a pen in which they might be there exhibited. No. 1 represents it closed as when fowls are within it. No. 2 is the same open, but the three other sides fold down, so that if the birds are sold it may be shut up in a flat form, occupying little space, convenient for conveyance home, and for storing when it there arrives. No. 3 is one of the rods for passing through the wicker staples that fit into the square holes shown in No. 2, and thus unite the sides. No. 4 represents one of the wooden bolts, *b*, which similarly fasten down the top and front to the sides and bottom, by passing through wicker staples, *c*, attached to them. *a, a*, are the wicker eyes, which keep the bolt in its place. This basket is 3 feet long, $2\frac{1}{2}$ feet wide, and $2\frac{1}{2}$ feet deep, and when we say that it is made by the inmates of the Asylum for the Blind, at Clifton, we give a sufficient indication who ought to be employed by any one desiring to possess one.

COVENT GARDEN.

WE promised, a long time ago, we are ashamed to say how long, to give an account of *how bouquets are made up in Covent Garden*; but so many other matters pressing on us at once, we have never been able to give attention to the subject till now. All who have visited, or are acquainted with, London, must have observed the exceeding beauty and taste with which these bouquets are arranged, and the art which must be employed in forming them; and it has been an object of curiosity to

many how such an arrangement is obtained. Until we set all our faculties of observation to work, we were equally as ignorant of the subject as any of our readers at the Land's End could be, but, after a little perseverance, we at last arrived at it. The process is as follows:—Procure a quantity of the finest copper wire, such wire as is used in the artificial flowers which decorate the interior of ladies' bonnets. It is with this that all the bouquets are tied; there is no string or matting made use of. Let a portion of this wire be kept in a coil, for tying, but let a portion of it also be cut into lengths of about six inches. Having decided what the device of the bouquet is to be and the flowers of which it is to be composed, let one of these flowers form a centre-piece, or “foundation,” as the ladies say, when they begin knitting a purse. This centre-piece forms, as it were, the centre of the circle, and all the other flowers are to be arranged in concentric circles round it. One end of the coil of wire is fixed to the stalk of the centre flower, and *every* single flower which is added is secured by a twist of the wire, much in the way we have seen boys tying a whip on the end of a stick. These bouquets are not formed of large bunches of flowers, such as a great truss of a Scarlet Geranium, or a spike of a Hyacinth, but *single* flowers, or florets, or bells, only are used. To supply the want of a long stalk, in such cases, to bend them by, the six-inch lengths of wire are twisted round the short stalks of the florets or bells, and these serve in place of stalks. *Camellias* also are furnished with these artificial stalks, when the natural one is too short; and when the bouquet is completed, the stalks of the flowers are, in fact, a bundle of wires. It is thus that so much device is obtained, which could not be had by using large bunches or trusses of any particular flowers.

The market is well supplied with all sorts of VEGETABLES, such as they are. Anything in the shape of *Greens* can be sold; we have seen large quantities of things which were evidently never intended for anything else than Cabbage plants, make as much as 5s. per dozen bunches. *Rhubarb*, *Sea-Kale*, and *Asparagus*, are plentiful. *Cucumbers* are very fine, at from 1s. 6d. to 3s. Fruit is very scarce. *Strawberries* make 1s. 6d. to 2s. an ounce. *Grapes* 15s. to 20s. per lb.

The FLOWERS are very plentiful, and consist of *Geraniums*, *Camellias*, *Violets*, *Tulips*, *Heaths*, *Epacris*, *Mignonette*, *Cinerarias*, *Cytisuses*, and *Azaleas*. H.

LISTS OF PLANTS—MIXED BORDERS.

WHAT is the greatest puzzle that a writer on gardening could put on paper?—what the easiest thing in the world for him to fill up space with?—and what is the most difficult thing an amateur or young beginner can take in hand? A list of plants, most certainly, no matter of what kinds—stove or hardy, sand or rock, peat, bog or swamp; plants to grow on the tiles of a house, on the top of a wall, or in the middle of a fish-pond; plants to grow under the shade of trees, or on the sunny side of a steep bank. Now, it would be just as easy to write out a list of names for any particular purpose as to whistle “The Blue Bonnets over the Border;” but without some reference and description, however short—without knowing where the plants could be had, or what the prices would be, where and when to plant them, what times they were in and out of flower, how to increase them, and the right kinds of soil and situation for them—such mere lists are of no more value to the general reader than a list of the parties to a sham Company, who advertise on purpose to cheat and chisel. We of THE COTTAGE GARDENER cannot puzzle or cheat by filling space with the bare names of any plants—at least, not until paper space is free of duty; hence the reason of our descriptive lists, and the unreasonableness of those who ask for mere enumeration of names, under the strange idea that if they but knew the names of plants they could make their beds and borders gay enough to their hearts’ content.

After this preface, I am going to turn to a new leaf, and write about *Herbaceous Plants*, *Hardy Bulbs*, and *very low Shrubs*, in earnest; but with no more system or arrangement than the spur of the moment may suggest. As to the proper arrangement of herbaceous plants, I must wash my hands of it at the first start; for, to tell the truth, I never yet saw even a good or tolerable disposition of such plants anywhere; all that I shall aim at, when I take any aim at all, will be to keep tall plants at a distance from the walks, or sides; and when I speak of two plants of the same height and time of flowering, the one with scarlet flowers, the other with rose, or bright pink—knowing that the scarlet is too powerful for the rose, or pink—I shall put a white-flowering plant between them. Also, when two colours do not well agree, as red and orange, a white put in between them restores the balance. Rose and scarlet agree very well, but then the scarlet is too powerful, and will drown the rose, as it were. I only go as far as the philosophy of the toilet carries me. Ladies, or at least most of them, are well aware that such and such colours, and such and such styles of dress, suit their complexions and figures better than others equally good in themselves, and they dress accordingly.

One thing should never be lost sight of in arranging colours for a flower garden, and that thing is never thought of by painters—*Every flower we use, whatever the colour, has some tint of green for a ground colour.* Painters arrange colours for a flower-garden as if flowers could be had without leaves at all, and that is just the key to the reason why a really good painter never yet succeeded in planting, or rather in showing how to plant, a garden fit to be seen. The nearer the complementary colours are brought together, the better their effect; hence the superiority of the bedding over the mixed planting. In borders, contrasting colours stand wider apart, and so are less effective; but that is not

all the drawback of the system—there must be such an overwhelming of ground colour, or the green of the leaves, as will drown the flowers. The ground colour is also of many tints of green, or patchy; and plant how you will, and transfer a true picture of your work to paper when at its highest of beauty, and what shall you have besides patches of green, and blotches of the various colours, set at regular distances. I maintain, therefore, and I shall stick to it, that you can never make a good picture out of beds or out of borders planted with herbaceous plants, and, therefore, that they cannot be compared, or be brought in competition, with a good system of bedding plants; yet the one is as good as the other for those who prefer either, and in large gardens the one helps to set off the other by the strong contrast.

First of all, let us take such hardy herbaceous plants as will do for bedding, or keep a long time in flower; here *Oenothera* furnishes four very good bedding plants, and half a dozen for the mixed border, and young plants of all of them may be planted as late as the middle of May, and flower the same season. *O. macrocarpa* and *Missouriensis* make two of the best match beds in the garden, the difference between them being only in the shape of the leaves. *Missouriensis* is more tender than the other, and in severe weather should be protected by putting a thick layer of sandy soil, tan, sifted coal ashes, or leaf mould, all over the bed. Both are increased from cuttings, when they are four inches long, in May, or in March and April from old plants potted and put into heat like Dahlia roots, and the young sprouts root much easier than Dahlia cuttings. Both dislike very much to be disturbed at the roots after once they are established, and their thick roots never sprout without the top part, where the natural buds are, just like the Dahlia.

Oenothera prostrata.—One of the best very low yellow bedders, where the soil suits it, and the proper treatment is given. The soil should be light and poor, and old plants to be divided, at the end of April, in small pieces, and these to be planted five or six inches apart. Every morsel of the root grows like couch grass. The best bed of this I ever saw was with a Rev. gentleman near Oxford, Mr. Lys.

Oenothera speciosa.—S. P., *Rushmere*, has added his testimony to that of THE COTTAGE GARDENER in praise of this beautiful plant, and Mr. Sims, of Fooks Cray, in Kent, had kept it in store for us many years after it was all but lost to the country. By-the-by, Mr. Sims has one of the best *Phloxes* that ever was seen for a bed, quite hardy, and quite a perennial, flowering from July till stopped by the frost, although a hybrid between one of the good varieties of *Drummondii* and a descendant of one of the panicked section. The *Oenothera speciosa* blooms profusely for three months, grows a foot or eighteen inches high, according to soil, and propagates like the Musk plant, but is apt to be lost in hard winters.

Alyssum saxatile and *saxatile variegata*.—This is just now in bloom, and there is not another plant in England that will come near to it in all the requisites of a bedding plant, or an edging for a bed, as far as it goes, but it only lasts for about three weeks in April, and ten days or a fortnight in May. It is about six inches high, and the mass of yellow flowers completely hide the leaves. It seeds sparingly, and they ought to be sown the moment they are ripe, and if so, and the practice were followed out, it would probably run into improved varieties. It is almost always increased by cuttings at the end of summer, under a hand-glass, behind a wall; is as old as Double Daisies, and ought to be in every garden, however small. The *variegata* is perhaps less hardy. The flowers of both are about the same.

Anemone japonica.—This is just a contrast to the last, coming in at the other end of the season—in September and October—very gay, very strong, and as easy to keep and increase as Dandelions. It is the best plant we have to grow at the edge of a pond, or swampy ditch; it is also a good rock plant, where the soil is good; I saw it that way at Claremont last year, and I never saw it finer. There is a hybrid variety of it, a much better flower than the one; both are purplish pink, and rise two feet high.

Anemone vitifolia.—This is the pollen parent of the hybrid *Anemone* just mentioned, and where it does well, is one of the best herbaceous plants we have. I have seen it in flower, a yard high, and eight feet in diameter, with perhaps

500 open flowers on it; and I have seen it in good hands not nine inches high, and with only five flowers on a shoot, and only two shoots to the plant in three years; very strong clay land, that is not too wet, seems to suit it best.

The single and double *White Wood Anemone* make nice low patches for the front of borders, and, in light soil, increase very fast by underground roots; and the *Yellow Wood Anemone* is nearly as gay and bright as Pilewort (*Ficaria verna*), flowering at the end of the spring. This is a native of England, and is very scarce indeed; if it were from the other side of the globe, no one could live without it. Then the different Portuguese Anemones (*A. palmata*), single and double, yellow, and also white, are not half so much grown as they ought to be.

The *Aquilegias*, or Columbines, form another class of hardy perennials, some of which are good enough for the best flower borders in the kingdom, and some for shrubby borders, as the endless varieties of *Aquilegia vulgaris*, or the common Columbines, which require little care besides sowing the seeds in the autumn, or early in the spring, and to allow head room for the plants, also to save seeds from the most approved varieties only. In the north of Scotland, in my younger days, we had more good Columbines in one garden than one can see now in an English parish. Even now, a nurseryman near Forres, Mr. Grigor, supplies the English market annually with one of the prettiest herbaceous plants we cultivate, the *Aquilegia glandulosa*, or, as Sir Joseph Paxton puts it, "the admirable glandulosa," and Dr. Lindley gives it a title still higher. The flowers are blue and white. Then the newer one called *Skinneri*, from Guatemala, is as pretty a border plant as need be. The nectarian spur is longer than in any of the older ones, highly-coloured, and the stamens pushing out in front of the flower give it a peculiar character. Whoever would take the necessary pains to cross this with other good sorts would be rewarded, if the very best herbaceous plants could be forced on the attention of amateurs. The old *A. canadense* is even worth growing for its coming into flower a month or six weeks before the usual time for them. Rich, light, dry soil, and a good depth of it, suits the best of them, and then they must be kept often renewed by seeds and by dividing the root stock. *A. formosa*, *arelica*, and *grandiflora*, are nearly as good as *glandulosa*, and easier to keep; and there are some good seedling varieties in the trade, but the names are in confusion.

Where is there a better plant, early in the season, than *Pentstemon scouleri*, just now coming into flower? It is not new, however, nor a bedder, therefore what is the use of it!

The *Campanulas* are most numerous, and some of them would really make florists' flowers; but, except the blue and white *carpatia*, and the smaller blue and white *pumila* and *pulla* for bits of rock-work, one would need to travel to some out-of-the-way cottager even to learn the names of such beautiful things as *Campanula persicifolia*, blue and white, double and single; *pulcherima*, *medium*, (or Canterbury-bells,) *glomerata*, blue and white, double and single, with several others which do not now occur to me.

The large red Eastern Poppy with a black eye, *Papaver bracteatum*, is not only one of the showiest when done well, but a regular bedder, if one could get so many of it, but it can only be divided at the roots.

Seeds of all the best *Dianthus*es can be had, and most of them are very showy on borders and on rock-work, particularly the varieties of *hispanicus*, which are sold in collections. Sown in May, and planted out any time from September to April.

Sanguinaria canadensis is now in bloom without the leaves, and is one of the very oldest and prettiest of our spring flowers. The leaves will come soon, and are soon over, long before the summer is, and it only requires to have the large tuberous roots to be divided every three or four years, and to be planted in warm borders.

As very opposite plants for rockwork, or the front of borders, we have only to mention spring *Phloxes*, as *verna*, *nivalis*, *subulata*, and *setacea*, *Saponaria ocymoides*, *Scutellaria alpina*, *Erius alpinus*, *Soldanella alpina*, *Ambrieta purpurea* and *deltoides*, *Onophalodes verna*, *Dryas octopetala*, from the dry hill sides in Scotland; *Corydalis nobilis*, *Ramondia pere-naiica*, *Gnaphalium arenarium*, *Statice tartarica*, *latifolia*, and *bellidifolia*, *Sedum hexangulare*, *populifolium*, and *rupestre*.

All of these ought to be as common as anything, and as cheap as old roses; none of them are bad to keep—*provided*—and this is the grand secret for rock plants—that the soil under them is not less than eighteen inches in depth, all above the common level of the surrounding ground, and as high above that as any body chooses to go; that the leaves or stems do not touch the soil, the "rocks" being placed on purpose to guard against that. The open spaces between the rocks ought to be covered with loose stones, and plenty of them, so that the rock-plants are neither splashed with mud in showery weather, nor exposed, at the roots, to hot sunshine—the rocks and boulders (gravel stones) being on purpose to guard against all that. Another condition, inseparable from the well-being of rock-plants, is, that the roots from neighbouring trees are not allowed to reach the rock-work; for if they do, not a single one of the plants here named will ever do the least good whatever in any such rock-work.

The following little trailing shrubs, or half-shrubby plants, are very suitable for rock-work, and for giving it a kind of clothed appearance during the winter:—*Daphne cneorum*, *Genista triquetra* and *saxatilis*, *Juniperus nana* and *prostrata*, *Pernettya phyllireafolia* and *pilosa*, *Berberis empetrifolia*, *Arbutus uva-ursi*, *Cotoneaster marginata* and *microphylla*, *Iberis sempervirens*, and as many varieties of Rock-rose, or *Helianthemum*, as one can get. All and every one of these are very easy to keep; all of them will root from layers, with a nice flat stone placed over the tonguing to keep it cool. Some, as the *Cotoneasters* and *Iberis*, will come free enough from cuttings, and they are all cheap and plentiful, except, perhaps, the Rock-rose and the *uva-ursi*. D. BEATON.

NEGLECTED GREENHOUSE.

(Continued from page 41.)

Potting.—All cuttings, all seedlings, should be pricked-out as soon as they are rooted and handleable. Otherwise, when the surface gets caked, they are apt to damp off there. When the plants are not thick in the seed-pan, this may be prevented by breaking the surface-soil with a sharp-pointed stick. In potting, *drainage* must be secured; and this is greatly helped by placing a little green moss between the draining material and the soil. To obtain early bloom, small pots must be used. When rapid growth is desirable put the soil in rather loosely; when early blooming is wanted, pack it firmly round the roots. Study what was said on Strawberries the other week. A gardener stirs the ground round a cabbage-plant to make it grow; he might have saved himself much of the toil, if an early flower-stalk was his object. When potting plants that are to remain in the pots a number of months without being expected to bloom, we pot rather lightly, knowing that before that time the standing and watering will have given firmness. As a general rule, do not repot when plants are showing bloom: the check is apt to injure it. It is better to supply extra nourishment by manure-waterings.

Watering.—Never do this unless when required, and then soak every part of the roots. Unless in the case of plants of little value, do not allow plants to stand in saucers of water, unless they relish marshy treatment, such as many of the *Mimulus*, and the old *Calla Ethiopica*. Vigour and cleanliness will be promoted by *syringing* the foliage in an afternoon, and shutting-up the house afterwards. Frequent light, *dusting* syringings are better than heavy ones, which are apt to deceive you in the waterings: nothing being more prejudicial to a plant than having its soil and roots saturated for one inch or so in depth, while the remaining part of the roots and soil are dry; thousands of plants perish from this cause alone. The cottager sprinkles the surface of his onion-bed with a fine-rosed watering-pot for a number of evenings after sunny days, and wonders how they do not grow amazingly; the progress being in a wrong direction. He encouraged the protrusion of surface-roots, to be scorched with the following day's sun, while the damping and caking of the surface had clogged up the pump-valve sucker of capillary action, which would have raised moisture from beneath to supply the mass of roots, so long as there was any moisture between them and the antipodes. The dribbling surface-waterings are even more destructive to

plants in pots. When you have reason to believe that the lower or inner part of the ball of your plant is too dry, be satisfied with no waterings, but set pot and all in a pail of water until it is thoroughly soaked. The appearance of the plant—the sharp sound a pot will give, when struck with the knuckles when the inside is dry, and the dull sound it yields when wet enough;—the quickness with which a little water runs into the soil when wet, and the difficulty with which it gets in when dry—are all easy tests for discovering whether the plant wants water or not. When a little used to it, the lifting of the pot and ascertaining its weight, is also an effectual and easy mode of calculating the moisture it contains. In using *manure-waterings*, err on the side of weakness. A spadeful of soot, first beat up into a paste, and half the amount of quick-lime added, will be sufficient for a hogshead of water. For a similar quantity, from half-a-bushel to a bushel of deer, sheep, or cow droppings would suffice. If made stronger, dilute it as it is used.

Sowing.—To avoid repetition, you will escape trouble and failure by attending to the following minutiae. Fill the seed-pots half way up, at least, with drainage; then with soil, within half-an-inch of the rim—the finest next the surface; press it down firmish, not too much; then thoroughly water them, or soak them by setting them in a tub of water. Let them drain thoroughly in an open place, until the surface begins to get a little dry; then press it level, gently, with the bottom of a flower-pot; or, better still, with a round piece of wood, say three to five inches in diameter, with a large nail or pin fixed to its centre to hold by. Spread the seeds evenly on this surface, and then cover with fine light sandy soil, *no deeper than the thickness of the seed*; so that for small dusty seed the slightest dusting of sand will be necessary, or nothing but another gentle pressing. The young plants will not want light until they are up; and the moisture already in the soil will be sufficient to vegetate all quick-growing ones, if prevented evaporating. To effect this object, there is no better or simpler plan than covering the mouth of the pot with inverted saucers or flats of a similar or larger size. Enough of air will thus penetrate to ensure germination, but not enough to dry up the moisture. When, however, the soil does get too dry, it must be watered, or soaked again afresh; and, in delicate cases, it will be safest to set the pots in water, as high as within an inch of the seeds, and allow it to remain until all below is thoroughly soaked. In common cases, a sprinkling on the surface will be sufficient. Remove the saucer whenever the seeds appear; but in small, delicate things, it will be advisable to place a square of glass over the mouth of the pot, and then, by degrees, elevating the glass on one side, before exposing the tender things to the full draught of air in the greenhouse. Rest assured, that an ounce of attention to these trifles will be more satisfactory than some bushels of unavailing regrets.

Cleanliness.—I am so glad this was your first step; no satisfaction can be obtained without it. As well expect to be healthy with our skin unwashed. Flues, glass, wood-work, walls, should be thoroughly cleaned, at least, once a-year. If the walls are painted, soap-water and a flannel must suffice. If coloured, use with the lime or whiting a good portion of flowers of sulphur, which will both mellow the colour and help to keep insects at a distance. No yellow leaves—no decayed flowers—no piles of dust—no array of utensils—no ranges of dirty pots, inside or outside the house—should ever be allowed to break in upon the general neatness.

Insects.—These will probably trouble you, but the syringe, cleanliness, plenty of air and coolness in summer, and an average heat of 45° in winter, will be your best antidote. Red spider will be deterred by the sulphur on your wall; painting a hot flue, if the bulb of the thermometer being placed against it will not rise above 160°, will start him, and do no injury. Green fly will be destroyed by tobacco-smoke. Thrip is not so easily dislodged, and it may attack your Verbenas; but the smoke, and the laurel-water tea, mentioned in a late number, will start him, if anything will. The great thing is never to *wait* whenever the first insect is detected: get him done for at once, by some means. I have seen a person mourning over an insect-covered plant, at his wits ends what to do, when such a simple thing as the use

of his fingers, and a drench from the syringe, or water-pot rose, would have set them all adrift.

I must postpone the treatment of the plants you possess, sowing seeds, and propagating from cuttings, until next week.

R. FISH.

(To be continued.)

THE POLYANTHUS.

THE *Auricula* has been written on lately, and a correspondent suggests that its fellow flower, the *Polyanthus*, ought to have my next attention, and as in duty bound, we are always pleased to meet the wishes of the readers of THE COTTAGE GARDENER, by adopting their suggestions.

The *Polyanthus* is, round London, a comparatively neglected flower; but in the West Riding of Yorkshire and in Lancashire it is cultivated successfully to a great extent. For myself, I can say, I like this flower quite as much as the *Auricula*; and as I have now as fine loam as any in England, I shall devote some attention to its culture, and hope to bring it more into notice in the south.

Propagation: by Seed.—This should be saved only from flowers of good form and clear bright colours. The plant, too, should have some attention paid to it in selecting such to save seed from. The old *Tantarara* has bold, broad, dark green foliage, as well as other good properties, and is still one of the best breeders; but there is a new variety lately raised in Yorkshire, named *Prince Arthur*, that is the best breeder I know. Seed, however, may be saved from any really good flower. As soon as the seed is ripe, gather it before the pods burst. The seed is generally ripe when the pods turn brown; cleanse this carefully-preserved seed, and keep it dry till March. Then sow it in the soil hereafter described, and place it in a gentle heated frame, or pit, close to the glass. As soon as the seedlings are large enough to take hold of, transplant them, six inches apart, into a prepared border, rather shaded from the midday sun. Keep them watered in dry weather, and let them remain there through the winter. If they have thriven as they should do, they will all flower the following season. All the care they require is to keep them clear from weeds and slugs. Any that possess good properties should be named and carefully marked, and as soon as they have done flowering should be taken up with a trowel and potted, and afterwards treated as the already proved and established varieties.

By Division.—The *Polyanthus* generally sends out plenty of offsets. When these have made roots of their own, they may be taken off the parent plant, potted, and treated the same as the seedlings, only they should be taken up out of the border early in August, potted, and placed amongst the old plants. Care must be taken in dividing them that the stem or root-stock off the old plant is not injured, as that would cause it to decay.

Soil.—The *Polyanthus* requires a stronger compost than the *Auricula*; and in order to have it so, let more loam be added to the other materials. I have found them to do well in the following loam, formed of the top spit of an old pasture kept in the compost-yard for twelve months, two-years-old cow-dung, and one-year-old decayed leaves, to be mixed in the proportion of two parts loam, half-a-part cow-dung, and half-a-part leaf mould, with less sand than that recommended lately for *Auriculas*. The *Polyanthus* has stronger roots, requiring stronger earth, or, more properly speaking, more loam than its neighbour the *Auricula*.

Spring Treatment.—This consists in top-dressing the plants, and keeping them well supplied with water. A gentle syringing over the leaves will be found beneficial; let it be done early in the mornings of fine spring days, and withheld when the weather is dull, cold, and gloomy. As it is in this season when the blooms appear, they should be slightly shaded from bright sunshine; but they will bear more sun than *Auriculas*, especially the dark-ground varieties. The shades should be put on about ten, and removed by three o'clock; in almost all cases, plenty of light greatly brightens the colours, so that no more shade should be used than is absolutely necessary. When the blooms are fully expanded, they will last much longer in perfection if the plants are placed under hand-lights where the sun cannot reach them during the middle of the day.

Summer Treatment.—After the bloom is over they should be placed in their summer quarters. I have found the north side of a low wall the best situation for them; and in order to prevent the attacks of the red spider, the grand enemy to these plants, I always placed the pots in saucers or garden-pans. When they were watered, that portion that ran through the pots remained in the pans, and by keeping the air round them moist, it prevented the red spider from attacking them. In this situation they remain till August. In the early part of that month they should be repotted, and that is a fit and proper time to take off the offsets; strong plants should be potted into pots from six to seven inches diameter. These should be moderately drained. If the plants are already in the full-sized pot, the balls should be reduced, and the roots partially pruned, so as to allow a large allowance of fresh soil. After the potting is finished, give a gentle watering to settle the soil, and keep them a fortnight longer under the friendly shade of the wall.

Autumn Treatment.—This may be said to commence the last week in August. The plants should then be removed into a more open place. The west border will answer admirably; and as the weather is then often more moist, the pans should be dispensed with, and the pots set upon a bed of coal-ashes, thick enough to prevent worms from working through into the pots. Here they may remain till the winter treatment commences in October, which must be in my next weekly paper on this subject.

T. APPLEBY.

(To be continued.)

CONIFERÆ.

(Continued from page 10.)

PODOCARPUS.—A genus formed by the late Professor Endlicher, from the Yews, to which it is nearly allied. Without seeing the fructification, no one not a botanist would suspect them to belong to Coniferæ, their leaves being so very unlike the rest of the tribe, excepting, perhaps, the genus *Dacrydium*, under which genus several of the species were originally placed. The species are chiefly from New Zealand, where they are very useful to the natives, and valued accordingly.

PODOCARPUS CHILIANA (Chilian Podocarp).—A native of the lower hill-sides of Chili, which accounts for its being too tender to bear the open air in this country. In the large conservatory in the Royal Botanic Gardens, Regent's Park, there is a specimen of this fine tree nearly ten feet high.

PODOCARPUS DACRYDIODES (Dacrydium-like Podocarp).—In New Zealand this tree attains to the great height of 120 feet, with a trunk from twelve to eighteen feet in diameter. The wood being soft, and consequently easily worked, the natives use it for constructing canoes, for which, on account of the great length of its trunk, and the lightness of the wood, it is well adapted. It grows in the swamps of that country, but is too tender to grow out-of-doors in England. It is, however, worthy of a place in a lofty conservatory; its fine, singular foliage renders it curious and striking.

PODOCARPUS MACROPHYLLA (Large-leaved Podocarp).—This was introduced from Japan about fifty years ago, but is not yet very common, because it is not generally hardy. It bears a considerable resemblance to the genus *Taxus*; hence it is well known under the name the Japan Yew, with long leaves. In a book of travels I read lately, this tree was described as one that produces excellent timber, which no insect will touch. In the extreme south of England it has braved the winter blasts with impunity for several years, but in the north it must have the protection of the conservatory, which it will ornament greatly, and does not attain too great a height, seldom exceeding forty feet high. It should be planted in strong loam, well drained.

PODOCARPUS SPICATA (Spike-flowering Podocarp).—This is the *Dacrydium taxifolium*, or Yew-leaved Dacrydium, of Sir Joseph Banks. It is a native of New Zealand, and is the tallest grower of the genus, attaining the astonishing altitude of 200 feet. The leaf greatly resembles the Yew, only it is rather longer and broader. Captain Cook discovered it on his first voyage round the world, and discovered, also, that it possessed considerable antiscorbutic

powers. He tapped some trees, and made from the juice a kind of spruce-beer, which he gave to his sailors afflicted with that dreadful disease, the scurvy, with the happiest results. Unfortunately, this useful tree will not exist in this country without the protection of the conservatory.

PODOCARPUS TOTANO (Totano Podocarp).—Dr. Lindley, in describing this excellent timber-tree, says it is so much valued, that the possession of these trees "has been the cause of wars among the savage natives." This helps to prove its excellence as a timber-tree. What a pity it is that it is not hardy in every part of Britain. In Cornwall it bears the full exposure; and also in the milder climate of Ireland it has stood out without protection. In colder climates it must have protection under glass.

SALISBURIA ADIANTIFOLIA (Maiden Hair-leaved Salisburia) was so named by Linnæus, in honour of R. A. Salisbury, Esq., author of the "*Flora Londinensis*," and in his day a celebrated botanist. This well-known tree is a native of Japan; the native name there is the Ginkgo-tree. It was introduced so long since as 1754, and has proved perfectly hardy. It is somewhat singular that this tree is dioecious, that is, bearing male flowers on one tree, and female flowers on another. The male tree flowered for the first time in Europe in 1795; and Decandolle detected a female tree in flower at a place near Geneva! The foliage of this very ornamental tree is peculiarly beautiful, being like the leaves of the Maiden Hair Fern (*Adiantum capillus veneris*), only six times larger. Whoever attempts to grow this tree, should, first of all, see that the soil is well drained three or four feet deep, and plant it in a deep sandy loam. It is deciduous, that is, sheds its leaves in autumn. In its native country, Japan, and the north of China, it rises to the height of 90 feet. The wood is of a beautiful yellow colour; but rather soft, and, consequently, not particularly valuable.

TORREYA.—This genus has been named by Sieboldt and Zuccarina, authors of the "*Flora Japonica*," in honour of Dr. Torrey, a writer in the American Flora. Allied to *Podocarpus* and *Taxus*.

TORREYA HUMBOLDTII (Baron Humboldt's).—A fine species, lately introduced from Georgia. It is so scarce, that its hardihood has not as yet been proved. It is said to be a very fine tree.

TORREYA NUCIFERA (Nut-bearing); better known as *Taxus nucifera*.—It is a very handsome tree from Japan, where it is cultivated for its nuts, from which the natives extract oil for culinary purposes. It is hardy near London.

TORREYA TAXIFOLIA (Yew-leaved).—Native of Florida, where the wood is much valued, because, though it is rather small, it is much used on account of being too strong-scented for insects.

T. APPLEBY.

(To be continued.)

RESERVE GROUND FOR AFTER CROPS—NORTH BORDERS.

In arranging the various crops for the season, due regard must, at all times, be had for those which will want putting in before any recently cropped ground can be again vacant, consequently, it is usually some time ere the whole be fairly under crop, as it would be imprudent to plant or sow every inch of ground at one time, when such things as Peas, and other successional crops, demand attention hereafter. To be fully understood in this respect, we will suppose a garden of the ordinary kind, surrounded by walls ten or twelve feet high, against which fruit trees of various kinds are planted and trained, as directed by our worthy coadjutor, and all in their proper places, as regards aspects, &c. Now, though I admit the full force of all that has been said of allowing a fruit tree border the sole duty of supporting the trees which are planted on it, yet, somehow, the demand for early and late crops of the more valuable kinds of vegetables is such as generally compels one to break through the resolution formed of not planting anything on such borders. The reason for that is, that we all know the impossibility of getting early crops from any other source than from south lying borders, such as usually exist on the sunny side of a peach wall, and whatever damage such crops do to the legitimate occupants of such borders, their utility, in a

measure, atones for it, and the liberal treatments such borders usually get in the shape of dung, and other strengthening food, enables them, in most cases, to supply the requisite nourishment to both crops, although certainly not to the same extent as if one only was to feed; neither would I advise it to be done on any other account than on the score of necessity, which often exists in such cases.

While recommending the south border, as it is called, for early vegetables, and such things as *Lettuce*, *Endive*, and *Cauliflowers*, which stand the winter, the "east" and "west borders" have likewise their uses, and, in their turn, form suitable places for such small crops as are seldom cultivated to such an extent as to come into the general "square." Such things as *Sweet Herbs*, especially of the annual kind, seed beds for *Lettuce*, and the whole *Cabbage* tribe, *Rampions*, *Pricked-out Celery*, prior to its final planting, and many other things which, not being deep-rooted, or severe exhausters of the soil, may be sown or planted there, observing that, as such borders are generally bounded by an important walk, it would be advisable not to plant anything likely to look rubbishy at any period of its growth, besides which, we should always have a small plot or so in such borders unoccupied, in order to receive anything new that may arrive, or to serve for successional crops that may require putting in from time to time.

Leaving these borders for the present, which, we presume, are in a great measure occupied by the early crops, let us take a glance at the north border, and see what its uses are, and how these can be turned to the best account; and make arrangements accordingly. In the first instance, we shall suppose that we have a slip of ground, some twelve or fourteen feet wide, running along the north side of a wall somewhat less than that in height. This slip of ground we expect will have been partly planted with a *late kind of Strawberry*, as the *Elton*, in order to prolong the season of that much-esteemed fruit by having some as late as possible. This fruit, we will suppose, occupies something like one-third of the whole, and, on the remainder, we propose to plant such things as the dry weather, and other circumstances, render an uncertain product in other parts of the garden; and in many gardens such a border is of great value, for, though in the coldest or moistest parts of the kingdom its uses may be less required, still there is often a something which wants retarding, or a space more than ordinary cool—as *Radishes* in summer, a shady spot on which to strike *hardy cuttings*, and other purposes; yet it is more especially fitted to meet the wants of a garden where a hot, gravelly, or sandy soil, and a dry season, renders the production of many vegetables a matter of much difficulty in the full exposure which the central part ensures, consequently it is in such gardens, and in such seasons, that the utility of "north borders" is more apparent, and it is to such that we now direct attention, thinking that the inexperienced might, in his anxiety to get every inch of his ground under crop, plant or sow this with some unimportant article, which could be as easily grown elsewhere. Now, though this would be all very well were we sure the season would so far prove propitious to the growth and welfare of the many plants requiring abundant moisture, &c., yet, as such can never be fully relied on with that degree of certainty which renders it safe to dispense entirely with the cool shade afforded by a high wall, that we certainly advise the major part of the border, not appropriated to *Strawberries*, to be reserved for such things as *Lettuce*, *Radishes*, *French Beans*, during the hot, dry weather, and such other crops as there may be room for, which demand particular attention.

Though it is yet too soon to think of sowing or planting on such a situation, yet it is not too soon to prepare the ground for that purpose: therefore, let it be dug over two or three times prior to being planted. Though we have said a moist and cool situation is required to bring the things we have mentioned to a proper growth in the hot weather of the dog-days, yet a stiff, sour, unkind soil, such as has never been turned up, to receive the benefits of the atmosphere, is not exactly the soil to meet such a case; on the contrary, most, if not all, vegetation prefers a more permeable compost, provided it be not too much deprived of its moisture, and has not absorbed too much heat, which it is not likely to have done in such a place as the one we have

been speaking of; it would, therefore, be better to dig and otherwise work up the ground intended for such after-crops, as will enable it to have all the benefits of changes of atmosphere we are likely to have before it be wanted for cropping; and as such borders will probably be in a very unkind condition, it would be advisable not to delay a single day in getting it turned up, so as to mellow down by the drying winds, &c., which spring is expected to bring with it; and if necessary, manure of some kind or other might be added at the same time, although, perhaps, it would be as well not to dig in any until the last time prior to planting, as future workings of the soil are sure to bring it to the top, and, consequently, waste it to a great extent; if such borders be unduly stiff and obstinate to deal with, it would be better to apply such manures as have a tendency to render it more open than the rich, cool nature of which cow-dung is a good type. We must observe, that as it is seldom necessary to occupy such ground early in the season, there is no excuse for its working badly at the time the crop is put in, for with repeated workings only it will, with the time allowed, be in sufficient train to receive anything that may be committed to it, although a something in the shape of a "renovator" will be necessary, if it has been loaded with a similar crop last year; and whether this renovator be decayed vegetable matter, animal manure, or some of those compounds which include both, we certainly prefer it in a solid state for this plot, for though, at the period the crops here require the greatest amount of food, liquid-manure might be very grateful, yet the general dampness which is often found here is sufficient, in most ordinary cases, to meet the wants of the various crops, that we do not advocate the use of liquid-manure, unless in extreme cases, as we think it has a tendency to stiffen the soil, rather than open its pores, and, consequently, render it worse to till another season, without conferring any particular benefit this; and it is well known, that a certain amount of porosity is necessary in order for it to imbibe the juices supplied by manure-water, that no means must be neglected likely to secure such; and whatever crops are destined for this place, it is important that the soil be made in good order to receive it in the first instance, as no after-treatment can well compensate for neglect in that respect.

J. ROBSON.

AGRICULTURAL OPERATIONS FOR APRIL.

THE PRESERVATION OF ROOTS.—Under the improved system of agriculture, a much larger number of cattle and sheep are kept than formerly, and as root crops form one of the principal means whereby stock are fattened, or kept in condition during the winter and spring months, it is, therefore, desirable that roots should be preserved in such a manner that they may prove sound and nutritious until an advanced period; for it occurs, in some seasons, and more particularly upon arable farms without much meadow or pasture land attached, that the Swedish Turnip is of more value for feeding sheep in the month of May than at any previous period of the season; and it must also be admitted, that Mangold-wurtzel is more valuable for feeding cattle, pigs, &c., after the middle of April.

I propose, first, to state the best mode of preserving *Swedish Turnips* in the land for feeding sheep, until the latest period for which they are usually required, that is, the months of May and June. The seed-stalk generally begins to advance rapidly towards the end of the month of March, and as soon as the seed-buds on the top make their appearance, and the stalk has run up about sixteen or eighteen inches in height, they should be cut with a reaping-hook very carefully,—not as it is often done with the scythe, and in a random manner, but every turnip ought to have the stem cut off down below the rim on the crown of the turnip, formed by the fall of its first leaves. When thus managed, the roots keep until an advanced period, retaining a great portion of their nutriment; after this treatment, it is a long time before any sprouts or greens can grow upon them—vegetation is, as it were, suspended—during which time the process of feeding may go on without further loss of nutrition; but, after a while, very small sprouts will appear round the crown of the turnip, affording the best of food for young lambs. Upon this plan, the writer has usually fed Swedes on the land,

with great advantage to the sheep, during the month of May, and, in some seasons, it has been continued as late as the last week in June, by which means a large stock of sheep has been kept, without feeding any grass upon the arable land until the hay crop has been cleared off.

There are different methods of storing roots for winter consumption; some parties advocating the plan of pitting in the field, by casting into heaps, covered with straw and earth; and others, that of pulling the roots, and setting them up in rows without covering; but either of these modes, although they answer very well until the month of April, yet, after that time, they will either sprout or rot; and, if left uncovered, will become so dry and shrivelled as to lose a great portion of nutriment. It is, therefore, quite evident, that the preservation of roots for winter and spring consumption will each require separate and distinct modes of management, according to the time of year they are intended for use.

The heaps of *Mangold*, *Carrots*, or *Swedens*, which may have been stored for the purpose of feeding cattle, pigs, &c, during the spring months, should now be examined; and, as soon as sprouting has proceeded to some extent, the heaps should be turned, the yellow sprouted greens rubbed off, and the heap reformed. If required for summer use, as is often the case with *Mangold*, a north aspect should be chosen, if possible under trees, or by the side of hedges. After being treated in this way, the roots will prove good for a lengthened period; but in case they are allowed to remain in the heap after sprouting has taken place, and warm weather ensues, heating is produced, the decaying of the sprouts quickly extend, communicating rottenness to the roots, and if not moved in time, general decomposition and loss will be the result.—JOSEPH BLUNDELL.

SUDDEN DEATHS AMONG THE SHANGHAE RACE.

NOT a number of THE COTTAGE GARDENER, and hardly indeed a day's post, that does not announce the occurrence of the calamity that heads this present paper. Whether limited to narrow enclosures, or indulged with a good country run, mortality has of late been busy with the Shanghai race; but happily its predisposing causes do not appear to be altogether beyond our controul, so far as I may judge from the cases that have been communicated to me. Birds apparently in good health, without any gradual or perceptible occurrence of disease, meet with such sudden ends, that *post mortem* examinations and coroner's inquests seem essential. A friend, whose knowledge and experience in poultry is second to none, tells us of four such cases in the past week; and he adds, "a first-rate white hen thus died last week, with another that was apparently in perfect health." Captain Hornby also tells me "a Shanghai hen, half-an-hour after he had seen her in perfect health, to all appearance, was found in her nest dead." Now, such catastrophes have been referred to in *The Poultry Book*, and confirm my opinion that an unwise anxiety to stimulate the bird's growth by extra feeding has more to do with it than any natural tendency to disease in the fowl itself. Captain Hornby found the ovarium of the bird alluded to above in a state of mortification, and containing a lump of egg-matter of the consistency of putty. The other gentleman, in examining a Shanghai after a similar case of most sudden death, "found large lumps of undigested liver in the stomach: the poor bird had picked up pieces of tobacco pipe, broken china, bones, everything in fact which might increase the power of its anatomical mill to grind or crush the offending masses, but the task was beyond its powers, and the sufferer died." Now, mark what follows from the same pen—"I feed on nothing but corn and meal, and have not lost one."

On the latter diet, no fowls will probably be found more generally free from disease than the Shanghai birds; while, if what I believe to be a most pernicious system of feeding is persevered in, few, I imagine, are more likely to suffer from its evil consequences. With many other recommendations, the Shanghai race have undoubted good appetites; and their present value, from the newly-awakened interest that has been generally taken in their race, too often proves a temptation to their owner to endeavour to aid growth, and

the production of eggs, by an excessive allowance of food, as regards either quality, quantity, or both. Less danger, indeed, may be apprehended from the latter than the former; for extensive as may be the capacity of a fowl's stomach, the time still arrives when it is forced to exclaim, "Hold, enough!" and however large the portion, provided only it be of wholesome description, their naturally vigorous constitution usually prevents the evil consequences of such occasional excess. But it is altogether a different matter if the contents of the over-charged stomach are such as were not designed to test the powers of the bird's gizzard. Grain, the hardest and the toughest, would have yielded to the combined influence of tobacco-pipe, broken china, and bones; but not these large masses of liver, against which Nature never intended to direct their powers; and which, consequently, proved fatal to the rash indulger of a vigorous appetite.

I was earnestly cautioning a neighbour on the hazard of such a system of feeding, when the answer came, "You find fault with flesh, but how great is the quantity of animal food that Nature, who best knows what is suited to all her creatures, supplies for our poultry when allowed to cater for themselves." Yes, a large amount of animal food is, doubtless, thus supplied, and good reasons are at once apparent why it should be afforded them, and why also it has no injurious effect. Worms, insects, and even a stray bone, are dainties of a very different character to those junks of offal and carrion that we have ourselves seen allotted to the inmates of the poultry-yard, but which were far better suited for the kennel. Even when perfectly fresh, it is well known that the entrails of an animal are more often found injurious to health, when taken as food, than any other part of the body; and such portions, the liver especially, are too commonly the usual selections for the poultry larder.

I have often expressed my firm conviction, that if fowls are to have flesh given them at all, beyond the exceptional case of illness, or where, from any other cause, a bird is in evident need of highly-nourishing food, it should be cooked, chopped fine, and given in very small quantities.

Thus far had I written over night, when, at an early hour this morning, intimation was conveyed to me that "The Cinnamon pullet was dead on her nest;" and the report proved unfortunately but too correct. Now, this said pullet was a great favourite, that had been most kindly sent to me by my friend Mr. Andrews, of Dorchester. Her hatching-time was out this morning, and yesterday, when the poultry-woman examined the nest, several of the eggs were billed; but, thinking the bird did not look as well as usual, she gave it a small portion of beef dressed and minced; there were no signs, however, of dangerous illness; but this morning, on entering the hen-house, she was at her last gasp, and died forthwith. One of the chickens had left its shell in the night, but was dead, and every other egg had a live, fully-formed bird in it, many of which are doing well, so it is improbable that there could have been illness of any long-standing but unobserved, since, in such cases, the inability of the bird to maintain the required heat for its eggs is manifested in their weakly or even defunct state when hatching-time arrives. Be it remembered, however, that I am not quoting this catastrophe as a parallel case to those before mentioned, but simply to show the dangerous tendency of a flesh-diet eaten in cases where it may seem most required. The following is the *post mortem* examination:—No external appearance of disease or emaciation; on opening the craw, it was found distended with pieces of meat, small, but in the same state as when swallowed twelve hours before death; the rest of the body was apparently healthy. The bird was, probably, somewhat exhausted, this being the first time of its sitting. The proper treatment would have been a small quantity of toast steeped in ale. In her weakened state the stomach was incapable of digesting the meat, though not given in any excessive quantity.

Now, many are already speculating on their chances of honours at Birmingham, or elsewhere, and too commonly is it imagined that one great element of success consists in forcing on their young birds by highly-stimulating food. But not only do I believe that such a practice constantly deteriorates from the ultimate vigour of the bird's constitution, even supposing it escapes the hazards of such continued repletion, but that frame and figure are thus both

injured; you lay more, in fact, on the carcase than the legs can carry,—hence rickety joints, and a host of other maladies, which, hardly as may be the Shanghai race, proves at last too much even for them. Many a bird has thus suffered during the past year, and many more seem likely to be stuffed and crammed by over-anxious owners during the present season.

Let those, however, who are disposed to practise this forcing system hear what Captain Hornby says in regard to it—"I believe," he writes to me, "that flesh ought never to be given when fowls can have the run of grass in open weather. Mine were busily employed this fine morning, after two days' wet, with the worms and grubs in the field. Thomas remarked—'Ah! they will eat very much less corn now, and the sack will hold out four or five days longer.'"

Now, because the most ordinary observer cannot fail to notice nature's provision of animal food for fowls, and other birds, many jump at the conclusion that *any* animal food is sufficient, totally forgetting that there is as much difference between the succulent and tender worm, or grub, and the indigestible hunk of liver, as there is between Naples macaroni and an Australian damper. In the former case, indeed, the comparison is much stronger, since, from the construction of fowls' stomachs, the hardest corn presents no difficulty, while the wad of flesh chokes and deranges the whole internal economy of the bird. The delicacy of the gold fields, therefore, would be far more innocuous to the human race than such rations of flesh to that portion of the gallinaceous tribe whose care I have been considering.

One probable cause only of that mortality, to which the statements before mentioned have referred, has been noticed in this hasty communication; but whether paralysis and apoplexy have not contributed to these casualties may be well deserving of further enquiry. The absence of all premonitory symptoms, in several of these cases, suggests the question to unprofessional minds, how mere indigestion, supposing that to be the cause, and the consequent disorganisation of the system, leads to such sudden dissolution, unaccompanied, as has certainly occurred in several instances, with any previous indication of disease whatever.

But, no matter the actual cause of death, enough is, at any rate, before us to prove the hazard of a flesh diet for our fowls, and to limit its use to those special occasions for which its reservation has been so constantly advised.—W. W. WINGFIELD.

ALLOTMENT FARMING—MAY.

THIS is the most important month in the whole year to the allotment holder, and the utmost vigilance is demanded of him; for he will find that almost every article under culture will require some kind of attention; and no after-care can atone for neglect.

In the first place, *weeds* will spring abundantly in all directions, and the man who suffers weeds to run to seed now, may calculate on a double amount of labour during June, July, and August. But it is not in seeding alone that damage ensues; a rising crop of weeds so injures a young crop of any kind, by depriving them of strength of constitution and hardihood, that neither good soil, nor assiduous after-culture, can possibly repair the mischief. Few are sufficiently aware of the injurious effects of the shade, and with it the impure air, in cases where the rising crop is becoming crowded with gross weeds fattening on the food intended for the young crop. It is a common, but very erroneous, impression, that when they are cleared away all will be right again; those who judge thus are sadly mistaken. I have seen scores of cases in which the young crop never thoroughly recovered the effects. Persons who do not nicely observe things, may rest satisfied with evils they have not taken the trouble to examine; but they may be assured, that where one man pursues clean culture, and another permits the foregoing evils, the former will be the gainer considerably at the year's end. Besides, what allotment holder will feel a pride in showing his plot to discerning persons in such a condition?

I must now beg to refer specially to certain crops which demand particular attention.

POTATOES.—Those who have early kinds above ground must be wary of late frosts until nearly the middle of

the month. I think it will be found, at least in the north, that in two years out of three we have frost during the first week sufficient to injure Potato haulm; and the least injury at this period will reduce the crop one-half, if it does not entirely destroy it. As I have before urged in these papers, it is not he who can get his Potatoes first above ground that produces the best paying crop. I am here supposing the grower as cultivating his choice *Walnut-leaved kidneys for sale*. Many persons of small holdings make a good deal of money of superior *Walnut-leaf kidneys*, if they can be obtained only a week or so before ordinary early crops, a practice to be recommended to the cottager especially, whose garden in general lying at his back door, his wife can keep them covered and uncovered; for such processes become necessary. A few poles over a slope, with any old rags or a little straw, will be as efficient as the ceremonious matting up of my lord's gardener, and cost nothing but trouble, or, should I say, pleasure? Those who have a cold and apathetic heart, and dislike activity, call it by the former title; the warm, active, and ingenious, by the latter. Of course, a little soil will be carefully drawn to the plants to prevent their greening, for however good the crop, this spoils all as to eating properties, and the *Walnut-leaved kidney* is peculiarly liable to it.

The later crops will soon be rising through the soil, and will require rather different treatment. It is well known that, from the circumstance of the very early kinds coming so speedily to use, added to the fact that they are mostly planted in highly-wrought and mellow soils, they do not require much cultural assistance; but with the main crops much may be done both by the hoe and the fork, especially the latter, if the soil is stubborn. These operations, however, must all be completed before the strings or fibres extend, or the crop will be weakened. Above all, keep down weeds; Potatoes require all the light and air possible.

CARROTS.—As soon as the crop is up let them be carefully attended to as to weeds, and beware of slugs and snails. Thin them out at two or three times, for fear of accidents, and let the small hoe be drawn through them betimes, repeating the process at the final thinning. It must be understood that these remarks apply to the large kinds of Carrots; the small, such as the *Early Horn*, will only need careful thinning and weeding. Small kinds will crop at two to three inches apart; the larger at about six inches. The Carrot grub must be watched for, and preventive measures taken, if possible. Lime, soot, and other things, have been strongly recommended. We have tried lime, and also soapsuds, but cannot boast of complete success. Our Scotch neighbours have been very successful with soot, it would appear—applications about once a week by the hand being said to drive the fly when about to lay its eggs. This seems feasible enough; and I, for one, will give it a thorough trial this season. It is very probable, that driving the fly away, by using applications of a nauseous character, may be a good mode of proceeding; but, at present, the best safeguard is to trench deep in autumn, working in what manure may be requisite at that period. This grub is the produce of an egg laid by an insect called *Psila rosea*, and much resembles the *Anthomyia ceparum*, or Onion fly.

ONIONS.—These, by the early part of the month, will be a good plant, and will require a little thinning, another being given about five weeks afterwards. Some sow them in drills, others broadcast; by the latter mode they may be thinned first to two inches, and lastly to about three or four. Thinning, however, must be regulated by the strength of the soil, as in all other crops—the stronger and richer the soil, the farther the plants must be apart. Most cultivators hoe through them liberally; we do not. I do not, however, condemn the plan, but merely observe, that I have had far superior crops since I rolled firm, and gave up the hoe, than previously. I had observed, repeatedly, better Onions in the hard-trod alleys than on the soft beds. As to the fly, or grub, spirits of tar, mixed with sand, and strewed over the beds, has been much talked of. I have tried this, but without success. If the soot applications, as in the Carrot, should answer, it is very probable it may succeed with the Onion.

SWEDES.—The beginning of the month is a good time to get in these; they are more apt to mildew if sown much

earlier. If, however, a seed bed only is required for the purpose of mixed cropping, or to succeed other crops, the sower must take into consideration the period at which he desires to plant them. I, for instance, shall this season plant my early Potato ground with Swedes; the Potatoes will not be clear off until the very end of July, and if I sow my Swede bed in the end of April, the usual period, the plants would be completely spoiled by standing too thick. Still, it is a fact which ought to be generally known, that Swedes may be successfully planted with bulbs two to three inches diameter; indeed, if they are obtainable, it is the best plan, due care being exercised, as we have proved; but then, to obtain such bulbs, something more than the ordinary seed-bed of the cottager must be had recourse to; they would require thinning in the seed-bed to four inches apart—a seed-bed, or drills, thus would require too much space for the allotment holder. Swedes love a rich and loamy soil, well broken by culture.

MANGOLD.—We find the *Orange Globe* kind superior to the *Louy Red* for pig feeding; swine eat it in preference, and they are pretty good judges of quality in material. It has another advantage to small holders—it occupies somewhat less room, being more compact in the top. Mangold loves a rich soil, and it should be of a fair depth. The first week in May is a very safe time to sow in drills singly, but in a mixed crop regard must be paid to the habits and periods of the crop, or crops, with which it is associated. Towards the end of the month the hoe must be got to work, and when the plants are a couple of inches high, a first thinning may take place, placing them so as not to touch each other; and all weeds totally destroyed. The final thinning to be when the plants are much stronger; they must then be set out at from seven to ten inches apart. After this, deep culture between the drills will be of infinite service; this may be done with an ordinary potato fork.

PARSNIPS will require singling out in the early part of the month, and at the end may be set at either final or half distance. The small hoe must be run through thrice in the drill, and after thinning is completed, a deep working between drills may be performed. Snails and slugs are sometimes annoying on wet lands, and must be guarded against.

THINNING-OUT.—I introduce this head to point to a matter of importance, as connected with the culture of what are termed “root-crops.” Our remarks on “thinning-out” have hitherto been confined to the ordinary routine as practised by farmers in general; but in this, as in most things, occasions arise in which it is expedient to deviate. Now it so happens that double the necessary number of plants in some root-crops may be left in the thinning process, with a view of pulling away alternate plants, when about one-third grown, for the wife, or the pig. Whatever may be thought of the plan by those accustomed to one course of culture, we can affirm it to be a most profitable and certainly convenient plan if done justice to, having repeatedly practised it. But it must be done by system; stated distances must be observed, or all becomes higgledy-piggledy, which is but another title for bad economy. Now, for instance, take the *Parsnip*; the seed sown in a continuous way, not in patches, in the last week of February. By the middle of April or so, the plants might be singled out—no two touching. At the beginning of May they will be “touching” again; and now the skilful thinner may so set them out, as that every other plant will come out for use during June and July; by the end of which month all final thinnings should be completed, in order to promote weight in the winter crops. What has been said of the *Parsnip* is equally true of the *Carrot*, the *Mangold*, &c. There may be some trifling sacrifice in the winter’s crop; but it will be trifling indeed, as compared with the advantages arising to the cultivator’s household. I would have no man come from his allotment-work with empty hands during May, June, July, and August; in whatever he brings home, there will be something for the wife and children, and something for the pig. I do hope that this proved advice will be practised; only let the thing be done in a workmanlike way.

CABBAGE-WORTS.—As before observed, sow a little dwarf Cabbage monthly, and continue to introduce a score or two whenever a fair chance offers; only do not let them hinder

good culture between root-crops. Those growing will require the hoe through them, and blanks mended.

BROCOLIS for autumn and early winter must be sown immediately. The following kinds will suit the allotment holder—the *Capes*, *Snow’s*, *Wulcheren*, and *Knight’s Protecting*. If *Green-kale*, *Brussels Sprouts*, or *Savoy*s, are required to plant out in July and August, to succeed some early crops, they must be sown directly.

LETUCES.—If winter plants were got out on rich soil in March they will now be getting very stout; nothing better repays the application of liquid-manure than this crop. Spring-sown ones may be planted out now, and another bed sown, after which, I advise the waiting until Midsummer has passed. The *Bath Cos* and *Ady’s* are two of the best.

SPINACH.—That sown in March, when fit for use, may be pulled clear up as wanted, the leaves eaten, and the remainder given to the pig, as it will not pay to keep. No more need be sown until August.

POTATO-ONIONS.—If these have been buried too deep, draw the soil away a little and weed clean.

RHUBARB.—Keep down all flower-stems the moment they appear.

PEAS.—See that the crops are well-staked, and a little hoe-culture carried out. Those who can afford to have late ones, may sow a few of the *Mammoth* or *Prussian* during the middle of the month.

BEANS.—Draw soil up the stems of Broad Beans to prevent wind damage, and cultivate about those just come up. It is too late now to plant with profit.

DWARF KIDNEY BEANS AND RUNNERS.—These, if not got in by the end of April, must be planted directly. The Dwarfs love warmth, and light and rich soil. Plant them in rows of two feet, the beans four inches apart; no kind is better than the old *Dun-coloured*.

As general remarks, I may say, be sure to watch well your rising crops, for the bird, or vermin tribes, are in wait on all sides to commit their ravages—in this month peculiarly so. I may again point to the use of finely-sifted cinder-ashes, as tending to prevent the depredations of slugs, snails, &c., on seedlings of any kind. We prepare a heap in a shed every spring, composed of these ashes and new sawdust, for this very purpose. However, a watchful eye is the chief thing, and many modes of dealing with these marauders will present themselves. I now take leave of the subject, with a strong recommendation to allotment holders and cottagers, so to persevere, as at once to improve the condition of their families and themselves, and to gain the approbation of those who seek their welfare, in thus affording them a chance through the medium of a plot of land. I have seen many allotments and cottage gardens in my time, and I can scarcely describe the painful sensation which a weedy, neglected, and ill-contrived plot gives to my mind. When surrounded by others of high culture, the mind turns from it in disgust and sorrow.

R. ERRINGTON.

HINTS FOR MANAGERS OF POULTRY SHOWS.

WHETHER for good or for evil, there can be no question that the poultry fancy has, within a very short time, extended itself wonderfully. Should any one doubt, the fact is proved by the “mania” having become such as at once to have aroused the grave censorship of the *Times*, and excited the comic lucubrations of *Punch*. The exhibitions which have been held, especially in the northern counties, affording opportunities to admire and to compare, and, at the same time, fields for friendly competition, must have contributed materially to bring about this result. They are cause and effect in turn; for the interests they have created in the different varieties of our domestic poultry, and the opportunities they have given for their dissemination, have caused the number of the shows themselves to be proportionably increased; and we have not only more of them in the localities in which they existed heretofore, but they are established, or in course of formation, in places where they were never heard of until now.

Agreeing in much that has been said against a minute subdivision of districts, it is proposed to pass over that part of the subject upon the present occasion, and to devote this

paper to such practical hints as may probably be most useful to a society already agreed to be established in any given place.

It is almost superfluous to occupy space in pointing out the advantage to such a society of a fair start; and every one who has assisted in the formation or management of an association, with whatever object, will agree that it is much more easy to frame good rules in the outset, than to abrogate bad ones, when discovered to be so; especially if they have been the means of giving an advantage, however unfair, to some one or more, who thus become interested in upholding them, and impute equally interested motives to those who only desire to amend for the benefit of all. Therefore, let the rules be well considered at first, and, as it is easier to add than to rescind, a rule of *doubtful* utility were better omitted. In fact, the fewer the rules the fewer the disputes; and the best set of regulations are those which simply go to secure to all "a clear stage and no favour." All beyond that is surplusage, or worse.

Throughout the whole system of formation and management, the legitimate object of such societies should be kept steadily in view. That object is, not to enable amateurs, and still less dealers, to obtain outrageous prices for particular specimens, but to improve the breed of fowls generally, and to afford alike to the gentleman, the farmer, and the cottager, the means of ascertaining what peculiar variety best suits his purpose, and to bring it within his reach at a price not unreasonable, but which shall, nevertheless, be remunerative to the breeder. A gentleman, for instance, whose family—or a farmer, or cottager, whose customers—require a constant supply of new-laid eggs, but whose premises do not afford facilities for rearing a number of chickens, will select those varieties which produce the greatest number of eggs without the hens desiring to sit; while, on the other hand, he who has no demand for eggs, but whose sheltered situation is adapted to the protection of chickens, which the neighbouring railway enables him to dispatch to Leadenhall market, will look for a variety of which the adults are good nurses, and the chicks are easily reared and attain the earliest maturity.

Keeping these leading principles in view, the society will, of course, promote the culture and dissemination of the best and most useful of poultry; at the same time that, as a secondary consideration, it does not lose sight of beauty either of form or plumage.

It is too obvious to require proof that these objects can only be attained by adhering, above everything, to purity of blood; for a contrary course would simply lead us back to the indescribable mass of mongrelism by which our poultry yards are already tenanted.

In offering prizes, a society will do well to keep steadily before it these three points, viz.,

1. Purity of blood.
2. Beauty and uniformity of plumage.
3. Size.

In the term "purity of blood," it is intended to include all those peculiarities and characteristics—whether of form, shape, or feathers—which denote high breeding and perfect distinctness of race; in short, all that is usually understood to be included in the term "thorough-bred."

"Beauty and uniformity of plumage" are to be taken as meaning, not a favourite or particular colour, but brightness and freshness of feathers, denoting cleanliness and health, and that the birds shown together, should, moreover, match each other, as everyone with a correct eye would wish his flock, whatever they may be, to present themselves to his view. And as a great good pig is better than a little good pig, so "size" is a desideratum also in other animals used for the food of man.

For the reasons already stated, all prizes for cross-bred birds, except, perhaps, in the case of dead poultry, are to be deprecated; the business of these societies being to keep the types of the purest races separate and distinct. And in order to render competition fair and equal, each variety, and in many cases, each sub-variety, must compete only with its fellows. This, undoubtedly, increases the number of premiums, but it enhances the interest of the show, affords opportunities of comparison, keeps the races distinct, and produces the shillings at the door.

The time during which the specimens are detained at the

shows, has been a fruitful source of discussion—not to say dispute. To bring valuable birds to a considerable distance from their walks, and confine them for days in narrow pens, in a polluted atmosphere, and with unaccustomed food, must necessarily be somewhat injurious to them; and it is desirable, on all accounts, to mitigate these evils as much as possible. At the same time, the expenses to which a society is necessarily exposed, in providing, and not unfrequently erecting, a building suitable for a poultry show, claim the consideration of the exhibitors. It is for the society (which consists chiefly of exhibitors) to do its best to hit the golden mean, and in attempting to assist in this, we would suggest a little concession on both sides. Amateurs ought not to be asked to subject valuable specimens to almost certain injury; nor ought a society to incur expense without a probability of being reimbursed. That the time occupied by some of the larger exhibitors, is unfairly great, no one, we conceive, can deny; and it is certain, moreover, that many amateurs refuse, on this account, to show.

It has been suggested, as a fair compromise, that all birds, whose homes are within fifty miles of the show, should be there on (say) the Monday evening, while those having a greater distance to travel, should be allowed until the following morning; that they should be judged on the Tuesday, and shown on the Wednesday, Thursday, and until mid-day on Friday, so that they could again reach their own roosts by Saturday evening, at the latest. No society ought to expect or to ask for more than this, while a day less would even be more in accordance with reason.

While at the show, the utmost cleanliness and attention should be insisted upon; a plentiful supply of food, fresh, sweet, and varied, and of the purest water, and the best ventilation the place can afford, should be provided; and if disease in any shape should appear, the patient should at once be removed. The pens should be sufficiently capacious to afford a good view of the birds, without crowding them, and should be so arranged, as to be free from draughts, and to place all of one kind upon the same level.

It was a common remark at a recent exhibition, that the Cochins in one row were bigger than all the rest; but this arose from their being placed higher up than the others, and with a whitewashed-wall behind them. This is mentioned as an instance of the unfairness (of course unintentional) of placing different specimens of the same variety in different situations.

Policemen, or other respectable persons, who can be relied upon to combine firmness with civility, should be stationed so as to prevent interference with the birds; and all eggs should be publicly broken.

The subject of sales is so mixed up with that of exhibitions, that it is necessary to advert to it. In whatever point of view it may be looked at, it is by no means without its difficulties. The most equitable plan, perhaps, would be, to permit those who do not desire to sell, to say so at once, instead of resorting to the subterfuge of a "prohibitory price." Others might be allowed to name a price; but at that price they should be compelled to sell, and prohibited from buying in. The new system of sales by auction is altogether objectionable, as securing the birds to him who possesses the longest purse, or, rather, perhaps the least prudence, while the owners can bid them up as he pleases.

The subject of dealers acting as judges has been so often discussed, that it is needless to say more upon it, than that I entirely agree with your correspondent, "N."

Where the classes are numerous, it is strongly recommended that more than one set of judges be appointed. Such an arrangement would save much time, and it admits of the additional advantage, that the services of those best acquainted with each variety might be made available.

Many societies allow labouring men to exhibit gratuitously, and a pleasing idea was suggested by an amateur of standing at a recent local show, namely, that of offering a pair of good birds as a separate cottager's prize, and of thus putting it in the power of a thrifty cottager to become possessed of specimens for stock superior to those which his means might enable him to purchase.

Another suggestion, not unworthy of consideration, is, that at the Christmas shows, prizes should be offered for the best specimens of dead poultry, by which means it would be ascertained, in some degree, at least, which is the best breed

for kitchen purposes; especially as the competition being necessarily confined to one point (which is the only objection to it), all would contend in the same class. The interest of such a class would be increased by requiring one specimen to be plucked, and another shown in the feathers (or two of each), and still further, by requiring the food used to be specified.

With the most sincere desire that the interest now prevailing in poultry matters, may be rendered permanent and beneficial to the community, and the tide which exists may be thus turned to good, and not to evil, by enabling gentlemen to distribute first-rate specimens among their tenantry and dependents, and by improving, to the utmost, the various breeds of our domestic poultry; these hints for the guidance of societies having those objects in view, have, after much consideration, and he presumes to hope, with perfect impartiality, been penned by one who has had many opportunities of considering the subject in all its bearings, in his capacity of

AN OLD POULTRY JUDGE.

APIARIANS CALENDAR.—MAY.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

LOSSES.—I said, last month, that I believed one stock out of every three had perished, but I now find that I had underrated the losses in this neighbourhood, for I now hear of seven out of fifteen, two out of three, and in one case of eleven out of twelve, and one or two others where all have perished; and the danger is not yet over, for we frequently hear of stocks dying towards the end of April, and sometimes even in May.

POLLEN.—Those stocks that are alive are carrying in pollen most abundantly of a golden yellow colour, which is obtained from Crowfoots, *Ranunculus ficaria*, and *R. bulbosa*, but more especially from the former, it being the earliest, as well as the most abundant; for next to the Dandelion it makes our meadows brilliant. It is Shakspeare's "Cuckoo-buds of yellow hue," and greatly, indeed, are our little favourites indebted to it for a supply of food for their early progeny. The *Crocus* lasts but a short time, and is met with only in gardens, while this covers almost every meadow in the kingdom during the months of March and April, therefore, how little advantage arises from cultivating bee-flowers, as they are frequently called, for it is the fields, and the fields alone, that supply their store of honey. Sow twenty acres of *White Clover* within a mile of them, and leave it for seed, and in the autumn twenty or thirty acres of *Buck-wheat*, and much benefit will arise; but the little that a garden affords them is almost valueless.

SUPERS.—Do not hurry in putting on supers. First ascertain that the stock is full with bees, and for a day or two even suffer them to be somewhat inconvenienced for want of room, before putting them on, and then the bees will enter them immediately and commence their work, especially if a piece or two of guide-comb is nicely fixed in them; whereas, if they are put on too early, not only the hatching of brood is retarded by the admission of cold air, but the bees appear to take dislike to the super, and will frequently swarm rather than enter it.

BEES IN AUSTRALIA.—It may be interesting to some of the readers of THE COTTAGE GARDENER to know how our little favourites, who have followed in the list of emigrants to Australia, fare at the Antipodes. The annexed extracts from Mrs. Meredith's recent interesting volumes, "My Home in Tasmania," give a pleasing picture of apiarian affairs there.

"We commenced keeping bees," says Mrs. M., "which thrive well at Port Sorell, judging from the quality of the honey they make; some of which, from hives kept in the bush, exceeds in fine delicate flavour any other I have ever tasted, the far-famed Narbonne honey not excepted. Numbers of bees are now wild in many parts, and hollow trees are frequently found in the bush filled with honey-comb.

"From the two hives of bees which survived the long confinement of the voyage from Port Sorell (one hive died, not having honey enough to maintain them), we have now twenty-three, besides five that I have given away; and, as we always drive the bees into a new hive when we take the

honey, instead of smothering them with brimstone, our stock will soon be much larger; whether the system of driving would answer in the severe winters of England, I am not aware, but here, we perform the operation early in February (which answers to August at home), and the bees collect a good store again before winter, and are even then rarely kept prisoners three days together without fresh food. Here the wide extent of clover fields, and the long lines of gorse hedges, added to the usual bush and garden flowers, seem admirably suited to the good little honey-makers. At Poyson, the young swarms always gave us great trouble, from their tendency to fly swiftly away, and we lost many in this manner; but here we have left off the tin-dish-and-key concert on the rising of a swarm, for without any interference they settle within a few feet or yards of the parent hive. One little bush of *Chrysanthemums* has had four swarms alight upon it within a month, and a Peach-tree has been similarly favoured. The honey-comb of this year (1851), is much of it, literally, as white as snow, and the honey colourless as liquid crystal, and of the most delicate flavour."

ERROR IN LAST CALENDAR.—Instead of "They (hives) may be painted after six o'clock in the morning," read, "after six o'clock in the evening."

TO CORRESPONDENTS.

SITTING versus SETTING.—We are much obliged to a *Lieutenant-Colonel* for taking the trouble to write for the purpose of telling us that he "cannot help smiling to see editors talk about birds sitting," for he assures us "that a man sits, but a bird sets." Now, unfortunately for our obliging censor, he is wrong. If he turns to that standard of sterling English, our edition of the Bible, he will find it written, "As the partridge sitteth on eggs" (*Jeremiah* xvii. 11). If he would consult a master of our more modern English, he will find that Addison says, "She mistakes a piece of chalk for an egg, and sits upon it;" and, to knock our censor down with his own weapon, "Dr. Johnson" adopts both these quotations in the folio edition of his Dictionary.

VERONICA (R. M. E.).—We do not know any Veronica by that name. Keep it till the middle of May, then plant it out, and let us have a specimen next August, and we can soon determine what it is. All shrubby Veronicas, without exception, like as good land as Cauliflowers. *Gaura Lindheimeri* and *Cosmos bipinnata* will come up now, if sown out-of-doors; but the latter should be got up earlier on a slight hot-bed, so as to have it earlier into flower next autumn.

ASPARAGUS PLANTING (A Lady Subscriber).—You may plant Asparagus if you can obtain plants with buds only about an inch long. The plants may be two or three years old, but, of whatever age, the shoots must not be cut for use next spring.

YELLOW BEDDING CALCEOLARIA (H. I. T.).—*Caie's Yellow* is as good as, if not better than, any for your purpose.

VEGETABLE IVORY (M. D. P.).—This is the kernel, or albumen, of the seed of the *Phytolophus macrocarpa*, or Ivory Nut, a native of Peru. It belongs to the Natural order Screw-Pines (*Pandanales*); evergreens having the habit of Palms. We do not know the "Coquilla Nut." By comparing together Johnson's edition of Gerard's and Parkinson's Herbars, we see that the Coquilla, or Guinea Nut, was considered by them to be the produce of a species of Palm, which they describe as *Nucula Indica racemosa*.

ARTIFICIAL INCUBATION (W., Liverpool).—Cantello, in Leicester Square, published a pamphlet on this subject. You will find a copious notice of it in our 82nd number. The heating temperature is about 106°.

HORTICULTURAL AND POMOLOGICAL ASSOCIATION (A Devonian).—We have no doubt it will obtain the plants you require from the continent, if you apply to the Secretary, and become a subscriber.

IMPREGNATING FORCING STRAWBERRIES (Strawberry).—This is not necessary for perfecting the fruit.

GRAFTS AND STOCKS (Pyra).—It is quite certain that a graft does not die at the time its parent departs from life; and it is quite as certain that a graft is not worn out at the end of fifteen years. The stock has no other effect upon the graft than to render it stronger or weaker, in proportion to the amount of sap it supplies. We know of no difference, as to duration, between a grafted tree and the parent tree growing on its own roots. Indeed, some good authorities think by judiciously grafting, a variety of fruit, such as the Golden Pippin, may be kept in a state of never-failing vigour. Grafting may be made, in some instances, to promote the fruitfulness and hardiness of the scion by a judicious adaptation of the stock.

SILKWORKS' EGGS.—Let I. K. A. send her or his address to Miss Candler, Bawburgh, near Norwich.

VINE LEAVES (S. C. H.).—We have no doubt that these are affected with the *Red Spider*. Sulphur is the best remedy, and a moist atmosphere. See of the best mode to apply in former numbers.

SHANGHAI EGGS (Ignoramus).—Their average weight is 2½ ounces. Sometimes they are double yoked, and then weigh more than 3 ounces.

TIME OF HATCHING (J. H. C.).—We believe, as in the case of the Wild Duck, that the eggs of Teal, Widgeon, Pintails, and Divers, each require four weeks for the incubating process.

CINERARIA (C. E. West).—Upper half of petals purplish lilac, lower half white; a large, bold flower, but not good enough for showing, the petals being too scattered, and the notch deep.

CROWING HEN.—*Chicken-hearted* says—"I am happy to be able to corroborate the statement of 'D. S. T.' and 'A. E. Taylor,' in your paper of to-day. 'K.' certainly is mistaken in saying, 'that a crowing hen never laid, and never will.' My hen laid many eggs until she had the roup very severely; after she recovered she did not lay for three

months—hence my motive for seeking your advice. She continues to grow, yet, I am happy to say, has laid within the last week."

NAMES OF AFRICAN PLANTS.—*A Subscriber* says—"I have just got the eighth volume of *THE COTTAGE GARDENER*. In the April number of last year is the following article:—'*African Plants*.'—M. B. has seeds from Africa with these names, *Bameea*, or *Ochra*, *Kashur*, *Saut*, *Hubb-Azis*. Can any reader help us to the botanical names?" I beg to send you my ideas on the subject, but I do not pronounce them to be correct, but only '*quantum valeat*.' *Hubb-Azis* I have not been able to find out.—*Bameea*, or *Ochra*, I take to be the Okro, of the West Indies and India, of the *Hibiscus* tribe, vide 'London's Encyclopædia of Plants,' article *Hibiscus Abelnoschus*, and *Esculentus*; also 'Hortus Suburbanus Calcuttensis,' article *Hibiscus*, &c., as above, page 118. In Hindoostanee it is called 'Ramitray.' It is a very nice vegetable. *Kashur* I take to be the *Saccharum spontaneum* of Roxburgh, vide 'Hortus Suburbanus Calcuttensis,' page 705. In the Arabic it is *Kuth*; in the Sanscrit *Kashu*. It is of the grass tribe. *Saut* is probably the 'Soub,' or 'South,' *Zinziber officinalis*, vide 'Piddington's English Index to the Plants of India.' The 'Hortus Suburbanus Calcuttensis' is by the late J. O. Voigt, surgeon to the Danish Government at Serampore."

CROSS-BREEDING FOWLS (*A Recent Subscriber*).—The uncertainty that attends the form of all cross-bred fowls preclude our speaking with confidence in answer to your question; for of a Shanghai-Dorking, or Shanghai-Hamshire brood, the resemblance to either parent would probably vary greatly in the different individuals, some reverting more than others to the characteristics of either parent. The Dorking being the heavier fowl, and the least disposed to exercise its powers of flight, you would have more chance of obtaining your object by taking that as one of the parents, than if a Hamshire was selected, since the latter are as indisposed as any of our poultry to allow their movements to be restrained by ordinary fences. The term "*Lovell Shanghai*" denotes a small, but very compact variety of that family; low on the leg, and with a good development of breast. They are excellent as layers, sitters, and for table fowls. Any dealer can supply you, and they are constantly advertised in our columns.—W.

MAKING A HOTBED.—*G. Boggis* says—"It being my lot to be placed where no dung is ever bought, I am obliged to make the best use I can of what is made, not from 'The Cottage Gardener's Pony,' but from one horse. Not liking to be defeated by a friend who has the dung from two horses, I made a hotbed in the following way:—I had a two-light frame at liberty, at each corner of which I drove a strong stake, and one under the centre of the back and of the front. I drove the three front stakes six inches lower than the back three. On these six stakes I have nailed part of an old paling (an old field-gate would do well); on this I set my frame, laying on some straw to keep the mould from running through, of which I have laid on nine inches thick. This being done, I took some of an old bed which has lain all the winter, and with this I built a wall at each end and at the front. At the back, under each glass, I leave an opening. The bed being thus far, I took some of six or seven barrowfuls of dung, which I had previously thrown up in a heap to heat, and threw it in under the frame, and then stopped up the openings which I had left with some of the same old dung as I had built the sides with, and four days after I threw in a little more of my hot dung. By this time I found my mould was a little warm, in which I sowed some Short-topped Radishes, and to my satisfaction, in about four days, they were up. I should have said that it was the last week in January when I made this bed. From time to time, as the dung declined in heat, I took some out at one end, and then the other, and replaced it with a little fresh, which I threw up, from time to time, to get a little heat; and I am happy to say I was able to draw Radishes two days before my friend who had the dung from two horses, who made his bed in the old way, with all his linings and attention which the old way of making them requires; and I would observe, that there is no fear of burning by my plan, as the dung I throw in does not reach the bottom. The Radishes, as I drew them, I found had run down through the nine inches of mould and straw, and the roots were hanging down two inches toward the hot dung. Some Potatoes, which I set as I drew, are looking strong and very healthy. I have some young ones upon them." [There is nothing new in Mr. Boggis's mode of heating "in a chamber," as it is termed, but we insert it to induce other readers to follow his example of contriving, and telling us what they contrive.]

EGG-EATING HEN.—*Y. L.* says—"Several different modes of treatment have been advised in your valuable publication for the cure of egg-eating hens (which propensity arises invariably from the birds being confined with an insufficient supply of food or calcareous matter), but I firmly believe this bad habit is incurable; still, as some of your readers may possess hens too valuable to destroy, I would advise them to adopt the following plan, by which means they may secure some eggs from such birds—Let the hen be kept apart from other hens that are laying; as soon as she proceeds to her nest (to lay), let her be removed to a nest in a box, or other convenient place where the light can be excluded, when she will lay, but, being unable to see her egg, will not attempt to eat it. Care must be taken that the box be well ventilated. Should this not succeed (but it may be relied on in most cases), have a perch substituted for the nest, so adjusted as to allow the egg to fall on some soft substance, that it be not broken; by these means I have obtained eggs from a first-class hen."

PEACH AND VINE FORCING TOGETHER (*A Yorkshireman*).—Yours is an extraordinary case—Vines and a Peach forcing together in the same house since February 1: the Peaches big as Walnuts, the Grapes not yet in blossom! From your statement, it is probable that your Vines, first excited too keenly, and thereby rendered tender and highly susceptible, were unable to cope with the extraordinary weather at the end of March. It is not unlikely that on one of those pinching nights your thermometer might sink to 35° or 40° whilst you were asleep; if so, curling—what you term "coiling"—or something as bad, must occur; or your border may be saturated below. The Vines making strong wood, drought could by no means cause it. Your soil appears an undeniable depth, &c., and the Vines, you say, making strong shoots. Hanging small weights on the curled bunches has been suggested, but we have little faith in it: the cause must be sought. Who ever saw this curling on the open wall? Our impression is, that you have been too ardent at "starting," and that you have lost your crop for this year.

FIXING COPINGS (*C. C. W.*).—There are various ways of fixing copings, and that suggested by you will certainly be a very good plan. As for putting copings on all the aspects, that is a matter of expense alone: the principle, we think, indisputable. Of course, a coping to a north wall can do nothing in the way of arresting solar heat; but then the drip! and, by your own confession, the cats and rats!! we verily had left the latter pests out of consideration. As for material, that must ever depend in a great measure on what is available.

DOUBLE VIOLETS (*Scrutator*).—Now is a good time to plant double Violets, and the sooner the better, if you have to buy the plants, as all the plants for sale are now ready and prepared for immediate planting; good kitchen garden soil, without being too heavy, suits them best, and they are best on an east or west aspect, and not to be in the shade. If you can get plants from your neighbour, the middle or end of May will be time enough for you to plant them. The double white Violet is more liable to be hurt by a hard winter, and it requires more shade and shelter than any other.

CAPE BULBS (*A.B.*).—With the exception of *Brunsvigia ciliaris*, which is *Buphane ciliaris*, all the names appear to us true. It is not true, however, that *Brunsvigia multiflora* was ever gathered at the Cape. It must be some other species. There is not a single plant in your list that ought to have a particle of artificial heat applied to them after potting, except *Strelitzia regina*, all the rest should have been placed in a cold pit, and to be allowed their own way from first to last. Large pots, twenty-one inches in diameter, for *Brunsvigias* twelve or thirteen inches in diameter, are monstrous absurdities; putting *Brunsvigias*, and such large bulbs, into heat as soon as they are potted on their arrival, is worse than madness; and Joseph Upjohn, who gathered these bulbs, although he named them pretty fairly, ought to have his ear nailed to the door-post for saying "light sandy soil for all," and "those marked with an x will require the aid of a hothouse." If he knows anything at all about the matter, he must have wished these beautiful bulbs to be killed as soon as possible, that he might have a fresh order for more. Get a light or two of a cold frame cleared, and divide your bulbs into two lots; No. 1 to be all those that did grow, turned sickly, and the leaves are dead; let them be kept quite dry till next September, unless they push a second time, when they must be turned to No. 2 lot. This second lot you keep moist all the summer, whether they make leaves or not, but after the first good watering use water very sparingly until the leaves come. In this lot place *Antholyzus*, *Cyrtanthus*, *Calla*, *Ornithogalum*, *Eucomis*, *Watsonia*, *Nerine*, *Valotta*, *Crinum*, and *Agapanthus*. So you see that your very smallest bulbs, and the very largest ones, are to be kept at rest all the summer. The *Strelitzia* ought to have the heat of a stove till the pot is full of roots, then a warm greenhouse, with a little forcing every spring, would do for it. Watch for the soils to be recommended, and the proper spelling of the bulbs in our articles on bulbs, in which all yours will be included.

STRIKING CALCEOLARIAS UNDER HAND-LIGHTS (*Ignotus*).—The chief difference between the practice of the friend referred to, and the practice detailed some time ago by Mr. Fish, consists in the latter using old sashes instead of hand-lights, and then removing them in winter, instead of allowing them to remain where struck. As the matter seems to create some interest, Mr. Fish will try to obtain from the nobleman's gardener referred to the minutiae of the process. Meanwhile, subject to the correction that may then be given, we give the following answers to your queries. 1. The cuttings referred to were taken off in autumn; they would strike equally well now, especially if a slight hotbed was placed under them. Without the bed they would take longer time in striking. 2. If placed on a north border, they would require little shading; if placed on a south, they must be shaded from the sun until struck. Mr. Fish's stock, struck in the simple mode detailed last autumn, had no shade. 3. South border would do well if shaded, but this involves more labour; we would like south or west for preserving where struck in winter, but the north for striking in autumn. 4. The hand-lights are kept close until the cuttings are struck, and air is then given. 5. Water when the cuttings are inserted; after that little more will be wanted except damping the foliage in striking in autumn. In striking now, several waterings may be required, as it is advisable to shade no more than will keep the plants from flagging. 6. Destroy green fly by fumigating with tobacco, but in autumn-striking, in September and October, it seldom shows itself, owing to the coolness of the weather. If, for expediting the process, you use a little heat now, harden them off as soon as possible when struck, and that will keep the fly at a distance.

ERICA POTTING (*A Subscriber*).—The sorts you mention are not likely to bloom if not showing now, and, therefore, you may pot safely in a week or two's time, as *ventricosa* may show in that time. If large plants that you wish to cut in, you had better perform that operation first, and not repot until fresh growth has taken place. This cutting in will make the plants more bushy, but some of the kinds you mention—such as *Cavendishii*—seldom require much of the knife, it grows so compact. *Vestita coccinea* takes it freely, or it soon gets lanky, and the *ventricosa* varieties, when strong plants, may be clipped without injuring them; but do not pot until growth has again commenced, and see that that growth is well matured, and you will have abundance of bloom.

RHODODENDRONS (*W. H.*).—If the peat is at all good, or like what you Essex people get in Epping Forest, it does not require one particle of sand added to it for growing Rhododendrons in a bed to the very utmost perfection. It is when used in pots that it is necessary to add sand to it. Essex is skirted with the best nurserymen in England, on the London side, and any one of them will point out to you the best of two sections for your bed—that is, the best hybrids of the *Panticum* breed, and the best hybrids of the *Catawbiense*; or follow us, and ask one-half of one and half the other. The real names of the kinds of Rhododendrons you want may not be known out of the nursery where they are applied; every grower names his own hybrid Rhododendrons, and when he gets an extraordinary good one, he puts an extraordinary good price on it, so that people do not bother him to sell it until he has a large stock of it, then he names it, gets the name in the market lists, and every body learns it, and can get it at anything, from 10s. to 110s., according to the size of the plant. You ought to have a couple of the *Andromeda floribunda* in the new bed. You will now get good ones for 5s. apiece.

IRISH IVY (*Ibid*).—It is requisite to prune Irish Ivy and all other Ivy,

when grown against a house; but if it is only for covering trees, common walls, and old ruins, it is better without any pruning at all.

ROSE CUTTINGS (*Ibid.*).—You put them in last autumn, and now they are in leaf, and you will damage them severely if you touch them, that is, if you remove them before the middle of next October.

CATERPILLAR (*Wingham*).—The Caterpillar is that of one of the moths belonging to the family Noctuidæ, most probably the Pot-herb Moth, *Mainestira oleracea* (See THE COTTAGE GARDENER, vol. 5, p. 207). There are a good many species of these moths, with similar caterpillars, and equally destructive to vegetables, of which they attack the roots, so that I cannot be sure of the species without rearing the caterpillar. Of course, they undergo the usual change to the chrysalis before becoming perfect moths.—I. O. W.

GRASS UNDER CEDARS (*M. S.*).—When Cedar-trees get old, with the boughs close to the ground, it is impossible to keep the grass under them in good order, and grass-seeds do no good. The only plan to keep such places green, is to lay strong turf once in two years, or every year, if it needs be, and it ought to be laid long before now. As, however, there is no tree more improved by top-dressing than the Cedar, you are in time yet; clear away as much of the loose, husky top as you can, and lay on three inches of good soil, and as they turf over this, let the soil be thoroughly and completely watered; water the turf, also, for awhile, and all will be as green as the rest of the grass all the season.

MANY QUESTIONS (*S. S.*).—The leaf is from the *Rose-scented Geranium*, quite different from the breed of old Searlet. *Robinson's Defiance* was recommended the other day for the Rose-leaf Geranium. The difference of one section of Geranium and of many other kinds cannot be described so as to teach one to know them; they must be learned from life. The *Sultan Calceolaria* is as dark as any eastern sultan ever was, inside or out. *Rugosa*, or *integrifolia*, and a dozen other yellow ones, are all suitable for you. No purple *Verbena* should ever be planted with *Heliotrope*. *Duchess d'Aumale* and *Heloise* are the very commonest *Verbenas*, and the best of their respective tints. We do not know any other two that would really answer for them; if we did we would have said so, and glad of the opportunity. We cannot tell which will do better on your peculiar soil, *Tom Thumb* or *Penstemon*; how could we? The *Verbenas* you propose to plant in the same bed with *Dielytra spectabilis* will kill the three plants if you will allow the plants to be run over by such strong growers. Pray, when you write next, come to the point at once.

CUTTING GRASS BETWEEN THE BEDS (*C. M.*).—Where the scythe cannot get at the grass, the mowing machine is the only other way of cutting it, but it costs from six to eight pounds. The planting will be given yet in time, if it was promised, and comes within our range.

ARBUTUS IN A BELT (*W.*).—Your objections to the Arbutus in a belt are quite valid, but unfortunately they also refer to all other evergreen shrubs that grow less strong than the Laurels. The Arbutus will grow stronger, and very much faster in a belt, where the soil has been well trenched, than on the grass, provided it is planted at the same time as the rest of the trees and shrubs in the belt, and provided, also, that no tree or shrub is allowed to injure it by overgrowth, shade, or drip. That it is seen to better advantage on the grass and over-head is true enough, so would every other shrub and tree.

LIST OF GOON DAHLIAS (*W. S.*).—You say you have had the misfortune to lose all your Dahlias, and request a list of thirty kinds of the best of any year (not 10s 6d ones). The following are such as would suit you—*Admiral* (Bragg), fine lilac, 1s 6d. *Ambassador* (Green), fine dark, 2s 6d. *Annie Salter* (Salter), white, shaded with rose, 3s 6d. *Antagonist* (Bragg), white, fine, 1s. *Cloth of Gold* (Hooper), deep-yellow, 2s 6d. *Dr. Frampton* (Rawlings), white and purple, 2s 6d. *Duke of Wellington* (Drummond), orange, 1s. *Earl of Clarendon* (Union), orange, 1s 6d. *Erminia* (Bragg), fine carmine, 1s 6d. *Essex Triumph* (Turville), dark maroon, 1s. *Gem of the Grove* (Soden), dark maroon, 1s. *Hon. Mrs. Ashley* (Bragg), white, tipped with cherry, 1s. *Hon. Mr. Herbert* (Keynes), buff, shaded with amber, 2s 6d. *John Edwards* (Salter), scarlet, 1s. *Lizzie* (Perry), white, tipped with purple, 2s 6d. *Louisa Glenn* (Rawlings), fine deep yellow, 2s 6d. *Model* (Fellowes), brown, tipped with bronze, 1s. *Mr. Seldon* (Turner), rosy purple, 1s. *Mr. Palmer* (Turner), salmon, 1s. *Mrs. Seldon* (Turner), yellow, 1s. *Negro* (Fellowes), dark crimson, 1s. *Nepaulse Prince* (Stein), crimson, shaded maroon, 1s. *Phantom* (Noakes), buff, 3s 6d. *Princess Radzville* (Gaines), white and purple, 1s. *Queen of Whites* (Drummond), fine white, 2s 6d. *Richard Cobden* (Stein), dark, 1s. *Robert Montgomery*, dark puce, 2s 6d. *Rose of England* (Rawlings), lilac-rose, 2s. *Summit of Perfection* (Keynes), dark purple, 1s. *Sir F. Bathurst* (Keynes), crimson, 1s. *Sir R. Whittingdon* (Drummond), ruby-pace, 2s 6d. *Scarlet King* (Green), fine scarlet, 2s 6d. *Sir C. Napier* (Hale), fine dark scarlet, 3s 6d. *Triumphant* (Keynes), crimson, tipped with white, 2s 6d. *Touison d'Orange* (Calloix), shaded buff, 2s 6d. The following are a few FANCY DAHLIAS:—*Cricket* (Dodd), buff and white tipped, 2s 6d. *Emperor de Maroc* (Huidox), rich dark, 1s. *Gasparine*, maroon, tipped with white, 1s. *General Cavaignac* (Hunt), purple and white, 1s. *Kossuth* (Drummond), red, tipped with white, 2s. *Laura Lavington* (Keynes), fawn, tipped with white, 2s 6d. *Spectabilis* (Salter), orange, striped with red, 2s 6d. Write to Mr. Appleby for further information.

CARNATIONS FOR BREEDING (*Carig Cathol.*).—You wish to know what Carnations are noted for seed bearing. There is no list published in this country that contains such information. The following are good breeders as well as good kinds. A list of the best Carnations will appear shortly from Mr. Appleby. **SCARLET BIZARRES**—*Rainbow*, Hepworth's *Brilliant*, Mandley's *Ringleader*. **CRIMSON BIZARRES**—Ely's *Lord Milton*, Haines' *Black Diamond*. **SCARLET FLAKES**—Ely's *King of Scarlets*, Mandley's *Robert Burns*. **ROSE FLAKES**—Brook's *Flora's Garland*, Ely's *Lady Gardener*, Ely's *Lovely Ann*. **PURPLE FLAKES**—Holland's *Earl Wilton*, Mandley's *Beauty of Woodhouse*.

CALENDAR FOR MAY.

ORCHID HOUSE.

AIR: now that the days have lengthened, and the sun obtains much power, air must be given liberally. If the house is built, as we recommended, facing east and west, the sun will have great power early in the

morning, and late in the afternoon, and, therefore, air must be given accordingly. **BASKETS**, examine weekly, and such as are dry give a good steeping in tepid water. **CATASETUMS**, **CYRTOPODIUMS**, and plants of similar habit, will now be growing freely, and should be as freely watered at the root, care being taken that no water lodges in the hollow of the young leaves. **DENDROBIUMS**, and any other plants in flower, should either be removed to a cooler house till the bloom is over, or be placed at the coolest end of the house, and more air given there; but they should be removed into their growing quarters till they have formed the new bulbs. **NEW PLANTS**, such as have just been received from abroad, should not have much water or great heat till fresh growths are commenced. **HEAT**: during this month the greater part of the plants will be making rapid growth; the heat must be kept up to the maximum. **MOISTURE** must also be plentifully bestowed upon the internal air; wet the walks, walls, and pipes, two or three times a day, especially in the morning and afternoon. **INSECTS**, such as snails and slugs, will abound; destroy them diligently. It is a good practice to look in upon them in the evening, with a lamp or a candle; they may be probably found at their work of destruction. **POTTING**, if not finished last month, should now be completed. As soon as a flower is potted, secure each pseudobulb to a stick, the compost being so open they would fall over if not securely tied; this gives an opportunity to arrange the shoots in a symmetrical form. **LYCOPODIUMS** grown in the Orchid House, divide, repot, and tie. **SHADING**, apply daily when the sun shines. **SYRINGE**: this will be in constant requisition, especially for plants growing on blocks. **WATER**, at the root, bestow liberally to all growing plants, but withhold it gradually as the bulbs arrive at maturity. Let the **WEEDS** be all drawn up, for they will grow even in an Orchid House. T. APPLEBY.

STOVE PLANTS.

ACHIMENES, attend, with support for the weak-growing; give freely plenty of water to those advanced in growth; pot the last batch this month. *A. picta* is a fine species to bloom in winter. **AIR**, give liberally to keep down at maximum point the internal atmosphere. **AMARYLLIS** coming into bloom; water freely; those going out of flower place in a close pit, and allow the heat of the sun to fully play upon them, to ripen the bulbs. **BASKETS**, if any are used for drooping plants, should be taken down frequently, and dipped in tepid water. **CLIMBERS**, attend to, tie on, keep within bounds, and syringe freely to keep down the red spider. **CUTTINGS** of stove plants: the plants will now be making young growths, and these make the best cuttings; take them off, and pot them in sand in heat. **GARDENIAS**, remove out of hotheds into the greenhouse to prolong the flowering; give less water; such as have done blooming place in a cold pit. **GLOXINIAS** and **GESNERAS**, repot, and syringe every day. **IXORAS**, specimens, tie out; young plants, place in dung-heat, to encourage rapid growth. **HEAT**, keep up to the maximum, 70° by day, 60° by night. **MOISTURE** to the air, supply liberally, by flooding the walks twice a-day. **OLEANDERS**, place in pans of water, to cause the blooms to open freely, and encourage growth. **SYRINGE**: use this instrument freely every fine day, avoiding such plants as may be in flower. **POTTING**: continue to repot young stove plants, to bring them on in growth. **WEEDS**: let none appear beyond the seed; keep everything tidy, and neat, and sweet, in order to render the stove attractive and agreeable. **WINTER-BLOOMING PLANTS**, such as *Justicias*, *Eranthemums*, &c., cut down, repot, and place in heat, to start them into growth. T. APPLEBY.

FLORISTS' FLOWERS.

AURICULAS and **POLYANTHUSES**, shade, and keep well supplied with water; pot seedlings, and sow, if not done last month. **CARNATIONS** and **PICOTEES**, finish potting without fail; plant out seedlings to bloom; sow seed. **CHRYSANTHEMUMS**, rooted cuttings, pot off; old plants, divide and repot, use rich compost. **CINERARIAS**, shade; pot off seedlings as they grow; it is not too late to sow seed yet. **DAHLIAS**, harden off, and plant out towards the end of the month; cuttings of rare kinds may yet be put in. **FUCHSIAS**, young plants repot twice during the month; old plants, stop shoots, and repot for the last time; seedlings, transplant, water with liquid-manure as soon as the foliage is abundant. **HOLLYHOCKS**, stake, and water with liquid-manure. **PANSIES**, in bloom, shade from sun; water and stir the soil about them; keep them clear of weeds. **PELARGONIUMS**, such as show flower repot; tie out specimens; give plenty of air to, and water occasionally with liquid-manure; put in cuttings; sow seed. **PINKS**, stir the soil between the rows, and apply a mulching of short dung. **RANUNCULUSES**, water freely in dry weather. **TALL LOBELIAS**, plant out where they are to bloom. **TULIPS**, protect from frosty nights and heavy rains; retard the bloom, if too early, by shading during hot sun. **VERBENAS**, stop cuttings, by nipping off the tops, to make them bushy; sow seed; plant out in large pots for specimens; water freely and shade. Look out for weeds, slugs, and various insects, and destroy them constantly and diligently. T. APPLEBY.

FLOWER GARDEN.

ANEMONES, water well between the rows. **ANNUALS** (tender), remove into another hotbed; pot, if not done in April; water gently, and give air as much as possible; prick out April-Sown. **ANTIRRHINUMS**, plant and sow for late autumn bloom. **AURICULAS** done blooming, remove to N.E. aspect, where they will not have the sunshine after nine; offsets with roots detach, and plant three in a pot; seedlings keep in the shade; water moderately in dry weather; Auriculas to seed should be kept from wet. **AWNINGS**, or other shelter, continue over beds of tulips, &c., now in bloom. **BEDDING-PLANTS**, be not in too great hurry to plant out; the middle of the month is time to begin any of the half-hardy plants. **BIENNIALS**, sow, b., in rows, thinly. **BULBOUS ROOTS**, generally, directly leaves decay, take up and store; seedlings shade through mid-day; plant again after separating offsets, or else store until the end of July. Sow **CHINA ASTERS** to succeed early, or supersede late annuals. **CARNATIONS**; remove side-buds from flower-stems; shade from meridian sun; water in dry weather; put sticks to, and tie stalks; sow. **DAHLIAS**, old, part and plant, b.; young, plant out, c. Dress the borders, &c., frequently. **FLOWERING PLANTS** require staking, &c. **FUCHSIAS** may be planted. **GRASS**, mow and roll weekly. **GRAVEL**, roll weekly. **HYACINTHS**, take up and store as leaves decay. **MIGNONETTE**, sow for succession, b. **MIXED BORDERS**, go over twice this month, and mark

such plants as seem out of place. *ENOTHERA MACROCARPA*, make cuttings of when the young shoots are three inches long. PRUNE and transplant *LAURESTINUS* when done flowering; also prune *BERBERIS AQUIFOLIA*. PERENNIALS, sow, b.; propagate by slips and cuttings. POLYANTHUSES, part, and shade throughout the summer; sunshine destroys them; sow seed of. ROSES, watch for insects on, and destroy them; roses in groups, keep them low; roses in pots may be planted out. Rose-stocks for budding, do not rub off shoots; but stop those not wanted at the second or third joint. STAKE and tie up plants. SEEDLINGS, thin. SURFACE-STIRRING cannot be too frequently performed. TULIPS, remove seed-pods; take up and store as leaves decay; water frequently in dry weather. WALL-FLOWERS, sow first crop, to bloom next year. WATER-GLASS bulbs, plant in borders as flowers decay. WATER OVER-HEAD newly planted shrubs and trees, and see to the mulching. WATERING, attend to in dry weather, especially to plants newly removed. At the commencement of this month, during showery weather, plant cuttings of *Double Wall-flowers* and *Pansies*, and divide the roots of *Neapolitan* and *Russian Violets*, transplanting in preparation for potting to flower in winter. *Half-hardy plants* may now be brought from the greenhouse, and their other winter shelters, and distributed in the borders. Mild, moist weather is most suitable for this work. The more tender climbing annuals, such as *Tropeolum aduncum* and *Convolvulus major*, should not be planted out until the end of the month. Put in SLIPS of *Double White* and *Purple Rocket*, under hand-glasses, or near a wall on the north side. CUTTINGS of *China Roses* plant in a shady place.

D. BEATON.

GREENHOUSE.

AIR admit freely in good weather. If the house should be shut up in cold nights, give air the first thing in the morning; toward the end of the month leave a little air all night, increasing the quantity by degrees. ANNUALS, &c., bring in from pits and frames, when approaching the blooming state. Sow quick-growing ones, as *Balsams*; and hardy ones, as *Collinsias* and *Nemophilas*, for succession. MIGNONETTE, sow in pots, or in turf under protection, for succession. ACHIMENES, bring first or second lot from their winter quarters, and place them in pans in the front of a cucumber-pit, or under a handlight in the greenhouse. BALSAMS and COCKSCOMBS must now be sown or potted; the Balsams requiring less heat and more air than the Cockscombs. CUTTINGS, consisting of nice stubby side shoots of young growth will now root readily in a mild bottom-heat. All bedding-out plants intended for the balcony or a small flower-garden may now be propagated very easily, if inserted in a bed of light soil over a little sweet dung, and a frame placed over them. All quick-growing things, such as *Verbenas*, *Ageratums*, and *Calceolarias* may thus be rooted with little trouble, and be fit for planting or potting in two or three weeks. Young shoots of *Heaths*, *Epacrises*, *Azaleas*, &c., may now be struck, inserting them in silver-sand, in pots well drained, and putting a bell-glass over them; keeping them rather cool for a few weeks, and then giving them a little mild bottom-heat. The whole of this section must be treated as previously recommended, according as they are in bloom, have finished blooming, or have been cut down by pruning. EARTH: stir the surface on pots and borders, and fresh dress where repotting or renewing the earth is not advisable. Sow seeds of the *Orange* or *Lemon*, and when of a suitable size let them be grafted or inarched—preferring the former—and placing the plants in a moist hot-bed; any stocks raised late last season may be so used. For flowering in a dwarf state, and almost continuously, the Otaheite orange is valuable. SHIFTING into larger pots must be carefully proceeded with. In the case of *Fuchsias*, *Geraniums*, *Cinerarias*, &c., intended as successive crops, those advancing should be carefully trained, according to the principles recently adverted to. SUCCESSION crops of *Achimenes*, *Gloxinias*, *Gesneras*, &c., must now be seen after. SALVIAS must be propagated for autumn and winter blooming. Seeds of *Salvia patens* produce strong, nice, flowering plants. Their doing well for the season will depend on the treatment they receive now. In consulting present convenience, we must not forget the future. STOCKS, and all half-hardy plants may now be sown under handlights, or a covering of some sort on a border, and will take the place, in succession, of those that received some artificial heat. HARDY PLANTS should now be set in a sheltered corner, to make way for the importations from the pits and frames. The first to be removed may consist of *Coronilla*, *Cytisus*, *Acacia*, *Pittosporum*, &c. SEEDLINGS and Cuttings must be pricked off in time, or they will destroy each other. WATER will be required oftener as the sun gains strength. Plants with large leaves generally require the greatest supply. PLANTS IN WINDOWS will now require extra attention. The increase of mild temperature will bring an increase of dust and insects. VASES and BASKETS for balconies and small gardens, must now be got ready, but do not be too venturesome in planting them for a fortnight to come, unless you can cover at night.

R. FISH.

FRUIT FORCING.

AIR, attend to regularly, still avoiding draughts. ATMOSPHERIC MOISTURE, sustain in due proportion. APHIDES, destroy. BOTTOM-HEATS, attend to carefully; beware of burning; 80° to 86° is enough for any purpose. CHERRIES will be ripe or ripening, ventilate freely. CUCUMBERS, thin, stop, and train; renew linings; get forward for ridging. FIRES, use cautiously. FIGS, water freely and stop. HEATS in general, advance with the season; be moderate in night heats. LIQUID-MANURE, use occasionally. LIGHTS, keep clean. MELONS, dress frequently; thin in the bine; stop a couple of joints beyond the fruit; sustain bottom warmth, and above all, permit no insects. NECTARINES: See Peaches. NIGHT-HEATS, be moderate in. PEACHES, attend to thinning both wood and fruit; stop wild shoots, and see that the root is moist, applying liquid-manure tepid. PINES, let top-heat rise with the season; keep abundance of air moisture, and ventilate liberally; bottom-heat 80° to 86°; successions get on by syringing and closing early; airing well in the morning. STRAWBERRIES will be getting towards the end; water freely, air liberally, and harden off early forcings to turn out for late out-door crops. VINES, stop, train, thin berry, tie shoulders, &c., according to their stages; ripening grapes, remove some laterals, and ventilate very liberally. VENTILATION in general must be constantly attended to. WATERING frequently; examine carefully the roots of fruits, if well drained they will take liberal waterings.

R. ERRINGTON.

HARDY FRUITS.

APPLES, choice, protect in blossoming; apply a briny clay paint for the American blight. APRICOTS, pick for the grub; pinch back all foreright shoots to two eyes, and disbud where absolutely necessary, remembering that where naked boughs occur, they may be clothed with spurs by tying down young shoots on those reserved at this period. BLOSSOMS in general cleanse or otherwise assist. BANDAGES of all kinds remove or loosen as early as safe. BLACK CURRANTS, dress for fly; soapsuds and tobacco-water, and water mulch at the root in the end. CHERRIES, beware of insects; dress as Currants. DIGGING of borders, beds, &c., finish. Grafts, replace and secure clay if loose. GOOSE-BERRIES, hand-pick if grubbed; top-dress where necessary. MUL-BERRIES, in training, disbud and pinch back similar to *Apricots*. NUTS, keep down rising suckers, and pinch gross shoots. NECTARINES: see *Peaches*. PEARS, disbud gross superfluous shoots, and pinch back weak ones where too thick; hunt for the Pear grub or caterpillar which clusters in curled leaves. PEACHES, disbud; pinch back; remove foreright and back shoots, and thin fruit slightly at the end; apply mulchings if on platforms, towards the middle; beware of insects, they prove ruinous in a very few days. PLUMS, as *Apricots*, dress for insects, as *Black Currants*. STRAWBERRIES, keep down early weeds and runners, and water very liberally in dry weather. VINES, disbud, train, &c. VERMIN, continue to destroy without intermission. WATERING, attend well to in new planting, and all needful cases. R. ERRINGTON.

KITCHEN-GARDEN.

ANGELICA, plant, or thin out, as the case may require. ARTICHOKEs, dress off, if not done, and plant a few suckers for succession. ALEX-ANDERS, attend to thinning, &c. ASPARAGUS, sprinkle with salt once a week during the cutting season. If this be attended to there will be no fear of weeds or slugs; but the surface of the beds should be opened once a week with some little pointed implement. BALM, earth-stir among. BEETS (Red), thin out, &c. BASIL should be exposed to the open air all fine weather, so as to have good stocky plants to plant out toward the end of the month in warm borders. BEANS, sow in succession in cool situations; attend to topping and earth-stirring advancing crops. BORAGE, sow, and save seed from such as have stood the winter. BORE-COLE, sow, b.; prick out, and save for seed. BROCOLIS of any kind may be sown at the beginning, for *Cape Brocoli* in particular this is just the season, when sown sooner they are so apt to run and button; attend to pricking and planting out any early-sown kinds, and to look to favourite kinds for seed. BURNET, attend to. CABBAGES, sow or plant; earthing attend to. CAPSICUM raised in hot-beds, should be well inured to the open air, for planting out in the open warm border, at the end of the month. CARROTS, sow; attend to thinning out advancing crops, also attend to watering the early crops in frames or the like. CARDOONS, thin out or sow b. CAULIFLOWERS, the early hand-glass crops should be well basened up, supplied with water, and liquid manure water, once a week; attend to pricking or planting out in succession. CELERY, may sow; attend to pricking and planting out the earlier sown. CHANOMILE, earth-stir among. CHERVIL, sow, and leave for seed. CRESS (American), sow; save for seed. CHIVES, keep clear from weeds. CORIANDER, sow, and leave for seed. CROPS FAILED, lose no time to replace. CUCUMBERS, plant out under hand-glasses upon a little bottom-heat; attend to thinning, topping, and removing any decayed leaves daily; those in bearing assist with a little top-dressing often. DILL, attend to. EARTH-STIRRING, in all cases attend to in dry weather. ENDIVE, sow a little towards the end of the month for early use. FENNEL, attend to planting out seedlings. HOTBEDS, attend to. HYSOP, attend to. KALE (SEA), earth-stir, or carefully fork up among the old crowns, if not done before; look over seedlings, and where sown in patches to remain, thin out and attend to. KIDNEY-BEANS (Dwarfs) and RUNNERS, sow main crops at the b., or transplant from hot-beds; make another sowing e. of the month for succession; attend to protection in case of frosty nights. LEEKS, thin out early, or transplant; leave for seed. LETTUCES, sow every fortnight; plant out and tie a few every week, and mark some of the best, or any favourite kinds that have stood the winter, for seed. MARIGOLDS, sow. MARJORAM (Sweet), see *Basil* (common garden), may plant and keep clear from weeds. MELONS, sow b.; pot off and ridge out in succession; attend to setting fruit, thinning, topping, earthing-up, and watering the advancing crops. MINT, plant out new beds where required; if short of rooted plants, cuttings will root readily at this season, if planted and well watered. MUSHROOM-BEDS should be made in the coolest situations at this season; attend to those in bearing. MUSTARD and CRESS, sow in succession where required. NASTURTIUMS, sow without delay, if not done before. ONIONS, weed; keep the surface earth loosened; a small fine-toothed iron rake will be found an excellent tool for this and similar purposes; (Welsh) leave for seed. PARSLEY, sow; thin out *Hamburgh*, and leave for seed. PARSNIPS, thin, and earth loosen. PEAS, sow in succession; draw up earth along each side of the rows before sticking, in case soakings of water should be required; sticking attend to in time. PENNYROYAL may be planted in a cool situation. POMPIONS, sow, or plant out under hand-glass, upon a little bottom-heat. POTATOES, hoe amongst with care not to injure the young fibre. PURSLANE, sow; leave for seed. RADISHES, sow in cold situations; and leave for seed. RAPE, sow for salading; (edible-rooted) sow, e. ROSEMARY and RUE, may plant. SAGE, may plant; cuttings root readily at this season if planted in a shady border and well watered. SALSAFY and SCORZONERA, sow main crop b. SUMMER SAVORY, sow or plant out. SAVOYS, prick out, &c. SPINACH, sow and leave for seed, and thin out young crops. TANSY and TARAGON, may plant. TOMATOES, attend to for planting out e. of the month. TURNIPS, sow, thin out and leave for seed. TURNIP CABBAGE, sow. VEGETABLE MARROW, sow or ridge out under hand-glasses upon a little bottom-heat. Many frosty nights may be expected during May, therefore, previously to planting out tender plants, remember how it is to be protected should cold or unkind weather set in.

T. WEAVER.

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WEEKLY CALENDAR.

M D	W D	MAY 5—11, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
5	Th	ASCEN. HOLY THURSDAY.	30.240 — 30.216	59—30	N.E.	—	26 a. 4	27 a. 7	4 0	27	3 29	125
6	F	Wood Tiger (larva).	30.239 — 30.162	54—34	N.E.	—	24	28	4 15	28	3 34	126
7	S	Ermine; gardens.	30.106 — 30.040	70—38	W.	—	23	30	4 30	29	3 39	127
8	SUN	SUNDAY AFTER ASCENSION.	30.061 — 30.043	69—43	W.	—	21	32	sets.		3 43	128
9	M	Portland; wood sides.	30.055 — 30.026	73—40	S.W.	—	19	33	9 a 2	1	3 46	129
10	Tu	Chevron; thickets.	29.915 — 29.852	60—43	S.W.	05	18	35	10 8	2	3 49	130
11	W	Wood White Butterfly.	29.883 — 29.831	61—46	W.	09	16	36	11 9	3	3 51	131

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 62.°3, and 41.1° respectively. The greatest heat, 81°, occurred on the 6th in 1830; and the lowest cold, 27°, on the 5th in 1845. During the period 108 days were fine, and on 74 rain fell.

YELLOW LEPTOSIPHON.
(*Leptosiphon luteus*.)



THIS little annual is a native of the west coast of North America, whence it was lately introduced, we believe, by the

AFTER considering, in our previous notes, the planter's art as applied to the management of boundary lines, we must come to what may be termed the garniture of the interior, as far as ornamental trees and shrubs are concerned. This leads to the consideration of masses, groups, and, occasionally, single trees, or shrubs; and one of the chief points, with a judicious planner, is so to furnish the grounds as to secure what is termed breadth, both of light and shade.

It may not be unnecessary here to offer a definition of what the planter means by *masses* and *groups*. Although, of necessity, pieces of planting will occur which may be considered as partaking of both characters, yet by far the majority will be more decided.

The term *mass* is generally applied to ordinary park planting, composed of both timber trees and underwood, the outline of which is plainly perceivable; and the term is frequently used to denote that kind of planting, which, by its density and tangled character, prevents the eye of the spectator from penetrating through. It is evident here, that the term is aptly enough descriptive of the planting frequently met with in extensive pleasure grounds. The term *massing* has also been applied to that peculiar style of planting in which a considerable number of trees or shrubs of a given kind are planted continuously, free from intermixture.

The terms *group* and *grouping* apply to planting

Messrs. Veitch, of Exeter. Douglas or Hartweg met with it, as we are told, in California, and Mr. Benthham named it from dried specimens sent home to the Horticultural Society. Stendel called it *Gilia lutea*. It is about the same size as the now common *Leptosiphon densiflorus*, and will answer all the purposes for which that species is cultivated in our gardens. There is a variety having paler flowers. These plants belong to the order of Phloxworts (*Polemoniaceae*), and to the first order of the fifth class of Linnaeus, *Pentandria Monogynia*.
B. J.

Propagation and Culture.—This new bedding annual is propagated by seeds only. I have seen cut-flowers of it exhibited by Mr. Veitch, and I can vouch for the brilliant yellow of the flowers. From what I know of it, and what I heard about it, I should have no hesitation in sowing a bed of it any time in April, and the soil can hardly be too rich for any of the *Leptosiphons*. I have no doubt about its being much sought after, as we have nothing else so low and so clear a yellow to flower for the five or six weeks during which it is in perfection. It is a very nice thing to sow for an edging all round a bed of *Calceolarias*, and to be ready to come off by the time the *Calceolaria* plants are grown sufficiently to cover out to the edge of the bed.

It would also answer very well to fill up the spaces between plants of *Oenothera prostrata*, to cover the whole bed at once.
D. BEATON.

somewhat more of a pictorial character, and, indeed, are expressive of objects, and their combinations, which no other terms could so well express. Of course, the very term implies more objects than one—never less than two, but generally composed of three or more members, so disposed as to form a compact whole. Groups, as to practical purposes, may be considered as smaller masses, intended to subdue the harder lines of the ordinary masses; also as furnishing occasion for the display of singular or superior objects in an advanced position. As for the term *clump*, although somewhat time-honoured, we would fain pass it by: a clump, is indeed, in many cases, but a lump, and lumpishness ill befits the landscape gardener.

Before the planter's masses, or groups, are pegged out, an attentive eye should be given to existing trees, shrubs, or masses, if there should be any such worthy of consideration; also to the general expression of the grounds, whether from nature or art. Added to these preliminaries, the proprietor must well consider the ultimate effect aimed at. Some prefer light, open, and airy scenery, where gaiety prevails; others massiveness, and a privacy almost amounting to seclusion. In the latter case the planter must exercise a somewhat heavy hand.

The walks having been determined on, with a due attention to the foregoing considerations, one of the

very first things the planter may consider is the planting requisite as an accompaniment of the walks. It will be obvious to our readers that walks through strips of lawn, unaccompanied by planting, would be exceedingly tedious; the mind of the visitor must be kept at work; and in order to accomplish this, variety is indispensable. Another reason also steps forward: it has ever been a maxim with good designers that all sudden turns or curves in walks should be accompanied by objects sufficient to convey an impression, at first sight, that the walk could scarcely have been anywhere else. Here lies one of the principal points of the planter's art—in throwing down his groups, or objects.

In marking out this kind of planting, the outlines must be made to bear a due relation to the walk, and may generally appear to turn to the walk, rather than *away* from it; and in some portions may be nearly parallel with it. However, no two plots of the kind should be precisely of the same form; the more they are varied the better. The inner facing of these groups, or masses, towards the lawn, should be very deeply indented in outline, in order to give intricacy as seen from other points. The deeper the bays, or indentations, the better, provided a sufficient degree of massiveness is preserved. Planting of this kind should in no part be narrower than from six to eight feet; nothing looking worse than narrow half-furnished strips, through which the eye can play in all directions; they appear manifestly an impotent attempt at forcing the bend. Where these bends are very sudden and deep, it frequently becomes necessary to add single objects in addition (such as good-sized and spreading evergreens), in such positions as the spectator, in approaching, might see a portion of the walk behind the piece of planting, and this to prevent trespass: inconsiderate persons, on seeing a portion of the walk behind the group, are apt to take the shortest route, and slip across the lawn, which thereby acquires the character of a pathway. Indeed, this is one of the principal faults chargeable on bold curves; and, unless the planter can find sufficient room to plant, he had best be content with curves of a tamer character. Now these groups, or masses, at the sudden turns, must, of course, towards the most salient points, appear to force the walk outwards in that position; they should also be planted, in the main, as near the walk as convenient—some portions jutting out to within a couple of feet of the walk.

It must be remembered that they have another important office to perform besides affording a reason for the bends—they have to give an idea of snugness to the walks, and occasionally shelter, and even shade. They must, therefore, be well furnished, chiefly with evergreens, assisted by pleasing forms of deciduous things, in order to give variety and contrast of both form and tint; and the general tone should, by the use of sprightly and decorative kinds, be rendered cheerful. Of course, the margins of such planting will furnish excellent situations for our dressy American shrubs, Roses, &c.; but, on no account, unless in small places, would we permit annuals or herbaceous plants to throw the whole

into confusion; we will point to more legitimate situations for them in the course of these papers.

In proportion to the size of the ground, and the breadth of the lawns, so may such planting be as to massiveness. In the grounds belonging to country seats, possessing much extent, and perhaps a park, and where the existing features carry on an ancestral impress, it would be quite out of character, in making new lines, or correcting old ones, to introduce such masses as are adapted to the walks of the villa, characterised by gaiety and airiness. A more sober tone must be imparted, unless in immediate contact with plots of high dress, and huge Hollies, Laurels, Yews, with our half-height trees occasionally, as the various *Cratæguses*, &c., will be more appropriate. Indeed, it is not uncommon to find the bends of such walks in old places sustained by three or four huge timber-trees, and with noble effect too. The only fault being, that such grounds are liable to appear somewhat gloomy in bad weather, and the walks to become damp and mossy. In such cases there is less danger of a trodden way being made across the lawn; for trespassers can, when so minded, pass through in several directions; whereas, in the case of a small mass, in a sudden bend, one way alone seems to present itself. It may appear to some that too much stress has here been laid on the management of planting, as connected with walks; but we have seen so many in our day, in which these guiding principles had either been set at nought, or unknown (and which, carrying no definite meaning, were devoid of the proper degree of interest to the cultivated), that we cannot look lightly on the matter, or handle it in a cursory way.

It will be understood that the preceding remarks have no reference to terrace or other geometric lines, for these require a style of planting wholly distinct, inasmuch as the impression to be given differs widely. The terraced line invites formality, or what has been termed, “a decided avowal of art;” and, indeed, many circumstances occur, frequently, in which a most formal style of planting ought to be resorted to; albeit the arrangement may not be what is termed a terrace—such cases not uncommonly present themselves in the grounds of suburban villas. Such are exceptional matters, and will be dealt with accordingly.

With regard to the kinds of trees, shrubs, and evergreens, eligible as appendages to the principal walks, we have before named the more massive evergreens as being selected where the features of the grounds are large; for dressy masses or groups in villa gardens, where the limits for decorative matters are severe, heavy planting must give way to a much lighter style; inasmuch, as our regular country seats possess, in general, such special departments for display as the ordinary villa cannot command. Every chance, therefore, must be seized, in grounds of limited extent, to introduce charming shrubs of permanent character as well as exotics. The grove, the massive shrubbery, together with timber-trees, creating huge shadows, must not be thought of, space will not permit their ad-

mission; an epitome of smart gardening must be the aim. Thus the very marginal plantings of the walks must become fragments of a flower garden, and, in many cases, descend to the character of a shrub-border.

However, there has been such valuable accessions to our dressy plants in later years, that a mere shrub-border may now be made a very different affair from what it was or could possibly be thirty years since. Whatever may be said in favour of masses of one or a few kinds, it will ever be found, that (as a whole) the greater the variety, the greater will prove the interest to the ordinary spectator.

It must not be inferred, from what has been here remarked as to planting the bends of walks, to which this paper is chiefly confined, that we would desire to confine the marginal planting to such bends alone; cases frequently occur in which planting near walks, irrespective of bends, must take place. We merely add, that such requires very careful consideration. Much of the latter kind would tend to destroy breadth, choke up many a charming vista, and give the whole composition a common-place appearance. The bends of the walks being first staked out, the planner will well examine his ground from various points in the principal walk, to see where glades of interest may be preserved. In limited grounds, it is most desirable that glades of as great depth and intricacy as possible should be preserved, and also where several jutting or salient points may be seen in the perspective. All this gives a kind of indefiniteness, leading to the idea of considerable extent. Of course, such glades must not run through to a boundary line, and they must be bounded by pleasing forms and tints. However, we shall have more to say on this head in a subsequent paper; we will now remind our readers of a few shrubs or families of plants peculiarly eligible for what we must term marginal planting, or that which constitutes an accompaniment of the walks. We do not offer it as a full list, or as complete, but in a suggestive way; the plants and trees for the interior will have to vary considerably.

Almost all of what are commonly termed American plants—such as *Rhododendrons*, *Azaleas*, *Andromedas*, *Magnolias*, *Vaccinniums*, *Kalmias*, *Ledums*, *Ericas*, *Menziesias*, and several others in this group, are particularly suitable; and in *very small* gardens should constitute the majority in this style of planting; indeed, it is by no means good practice to mingle our ordinary shrubs or evergreens with them, unless very dressy, and of moderate growth. Such shrubs as the *Laurustine*, the *Aucuba*, *Alaternus*, *Cotoneasters*, *Clethra*, the various *Cistuses*, and *Helianthemums*, *Berberis*, if of moderate growth, *Illicium floridanum*, *Garrya elliptica*, new *Ilexes* of moderate growth, *Junipers* of choice character, *Jasmines*, of which there are several nice kinds, *Amygdalus nana*, for spring-flowering, *Arbutus*, *Arctostaphylus*, *Buddlea*, *Buxus*, choice kinds, *Spireas*, *Judas tree*, *Benthamia*, *Corchorus*, *Ribes*, *Escallonia*, *Cytisus*, *Epigœa*, *Euonymus*, *Fabiana*, *Forsythia*, *Deutzia*, *Cydonia*, *Tamarisk*, *Syringas*, *Lilacs*, *Symphoricarpos*, *Leycesteria*, *Robinias*, *Rhus*, *Photinia*, *Pœonias*,

Mahonias, *Myrica*, *Pernettya*, *Gaultheria*, *Althæa frutex*, *Hydrangeas*, and many others. All that are really ornamental in the above genera, and are not coarse in growth, will be found very useful for this style of planting; those who desire extensive collections may add many more. In a subsequent paper we will say more about ornamental planting. E.

WE recommend to our readers *Starr's Patent Protean Jet*, or rather *Nozzle*. We recommend it because it can be applied without difficulty to any garden-engine, requiring only to be soldered on to the end of the delivering-pipe; and because it saves much trouble.

This one nozzle enables the gardener to force forth streams of water from the single jet for washing trees, to the smallest dew Jet for giving moisture to flowering plants. There is no need to exchange one nozzle for another, as was formerly the case, this being effected in the *Protean* by merely turning a handle or small wheel, which immediately causes the change.

Should it so happen that the water used has any deposit, or contains small pieces of stick, leaves, or other substances, as frequently occurs, and which with ordinary nozzles is the cause of much trouble and delay, each hole often requiring to be opened separately, but with the *Protean* there is no farther trouble than to turn the wheel, until a full stream of water comes through it, which will clear away any thing that may impede the flow in an instant.

THE *Shanghai Cock*, "Nelson," mentioned in our last number as being purchased by Mr. Sturgeon for £43, we are informed, was originally bred by that gentleman, who sold him to Mr. Griggs for £5, and he passed from the latter to Mr. Potts, and from him to Mr. Fox, at whose sale Mr. Sturgeon purchased him. The price, we think, is the largest yet given at a public sale for a single bird, and as he is bought, we are told, as a stud bird, it demonstrates Mr. Sturgeon's unshaken opinion as to the superiority of his own strain.

MESSRS. VEITCH, of Exeter, have purchased from Messrs. Knight and Perry, *the Exotic Nursery at Chelsea*, and it will be, henceforth under the direction of Mr. Veitch, jun. We wish, and we have no doubt that our wish will be accomplished, that it may result in as abundant a fortune to Mr. Veitch, as Mr. Knight is said to have realized.

THE anniversary of *The Gardeners' Benevolent Institution* is fixed for the 13th of June, and the dinner will be presided over by Samuel Laing, Esq., chairman of the Crystal Palace Company.

Sir W. Hooker has had the highest honour conferred upon him that the Copenhagen Academy of Sciences has in its power to confer, by electing him one of its Foreign Members. It adds to the honour that he has

been selected to fill a membership held by M. Mirbel, and become vacant by his death.

THE importance of *Guano* as a fertilizer is demonstrated by the following table, showing that, through years of depression, as well as in years of prosperity, its employment has proceeded gradually increasing :—

Years.	Tons.	Years.	Tons.
1841	2,881	1847	82,000
1842	20,398	1848	71,414
1843	3,002	1849	83,438
1844	104,351	1850	116,925
1845	283,300	1851	245,016
1846	89,203		

We will add, as the result of an analysis cannot always be tarried for by an intending purchaser, that the following aids to his judgment, furnished by Professor Johnston, may be relied upon.

"a. The drier the better—there is less water to pay for and to transport.

"b. The lighter the colour the better also—it is the less completely decomposed.

"c. If it has not a strong ammoniacal smell, it ought to give off such a smell when a spoonful of it is mixed with a spoonful of slaked lime in a wine glass.

"d. When put into a tumbler with water, stirred well about, and the water and fine matters poured off, it ought to leave little sand or stones.

"e. When heated to redness in the air till all the animal matter is burned away, the ash should nearly all dissolve in dilute muriatic acid. The insoluble matter is either useless sand or earthy adulterations.

"f. In looking at the numbers in a published analysis of a Peruvian guano, those representing the water should be small; the organic matter containing ammonia should approach to fifty or sixty per cent., the phosphates should not much exceed twenty per cent., and the common salt and sulphate of soda ought not to form much more than five or six per cent. of the weight of the guano. In Saldanha Bay guano, the proportion of phosphates is much greater, and of organic matter less."

COVENT GARDEN.

THE Londoners may be said to be inveterate gardeners. From the dark and sinuous purlicus of Drury Lane and Saffron Hill, to the open day-light squares and crescents of the West End, may be seen some indication of this passion for horticulture. But although, in both instances, the same pursuit is displayed, the tastes are evidently different. In the one, it may be called a love of gardening, and in the other, a love of flowers. In the former, it is a taste for cultivation; but in the other, an admiration of the thing cultivated.

We have often wondered what extent of cultivation these minds, in the neglected parts of London, are capable of, that display so much refinement in the assiduity with which they nurse a wild Daisy, or Primrose, in a fractured tea-pot or ginger-beer bottle. There is surely something more than the mere animal development here. Our attention has been more immediately directed to this subject, in consequence of the immense quantities of the commoner flowers which are, at this season, continually forced upon our observation,

both in the markets, in the streets, and on hawker's trucks. The Primrose, Daisy, Wallflower, Polyanthus, and Southernwood, are among the most popular; and in almost every lane, alley, and court, may be seen the various degrees of success with which these are kept in life. It is not only in the dwellings of the poor, however, that we have remarked this fondness for gardening. It would seem that some, who perhaps have no dwelling at all, or such an one as does not afford the facilities for indulging even this harmless gratification, resort to other means; and it was but the other day we encountered, in our peripatations, a well-cultivated and fertile spot on the fore-deck of a coal-barge! Who of our readers would ever have dreamt of a flower-garden in such a spot? Even our assiduous friend, Mr. Beaton, with all his train of fair followers, could never have thought of looking for a flower-garden in such a spot, and that, too, floating on the very bosom of Old Father Thames. And a very pretty garden it was. There were no circuitous walks; no ingenious devices; no grouping of colours; but there were some bright Anemones, of all colours; Polyanthuses with trusses as Polyanthuses never trussed before; double lilac Primroses; Hen-and-chicken Daisies, eclipsing in interest the finest poultry-yard of the greatest fanciers; lumps of Stone-crop, trailing down the sides of old tin tankards; "Bloody-walls," or "Warriors," looking as gay as any officer of the household guards; "Daffodown-dillies," as our ancestors called them, rich in beauty, and replete with fragrance; with here and there bushes of grim Southern-wood, and the whole artfully and tastefully enclosed with an edging of the whitest of oyster-shells. We have interesting scenes in London which the rest of the world know not of; and such a scene as that now described is more gratifying to us by far than the luxurious and ready-made window decorations of Belgravia. It is, then, with plants of this description, that our attention has been attracted during the past week in Covent Garden Market.

The trade in VEGETABLES has been good, but the supply is short, and the prices, in consequence, high. *Greens* make as much as 4s. to 6s. per dozen bunches. *Turnips*, 3s. to 4s. per dozen bunches. *Brocoli*, 2s. to 4s. per dozen. There is a good supply of *Rhubarb* at 9d. to 1s. a bundle. *Sea-kale*, 2s. per basket. *Asparagus*, 5s. to 7s. 6d. per bundle. There are also several arrivals of *Early Horn Carrots*, *Radishes*, and *Lettuces*, all of which are forced. The FRUITS consist chiefly of *Hothouse Grapes*, very fine, at 10s. 6d. to 15s. per lb. *Strawberries*, 9d. to 1s. 6d. per ounce. *Apples* are very scarce, and none good. *Cucumbers* are very fine, at from 6d. to 2s. 6d. each.

The FLOWERS are abundant, and are principally of *Hyacinths*, *Tulips*, *Violets*, *Epaeis*, *Heaths*, *Cinerarias*, *Camellias*, *Chinese Primroses*, *Geraniums*, *Roses*, and several choice stove plants, among which we observed a great deal of *Stephanotis floribunda*, which seems to be becoming a leading flower in the highest-priced bouquets.

PLANTING AN ORCHARD OR FRUIT-GARDEN.

(Continued from page 37.)

HAVING, in former pages, disposed of the walls, borders, &c., of the enclosed kitchen-garden, as far as the general arrangements necessary for the permanent establishment of a fruit and vegetable-garden is concerned, I may now turn to the ordinary *Orchard*.

At first sight it may appear unnecessary to handle it separately, but we shall show that some other considerations arise which demand a separate notice. In the first place, the arrangements as to walks will necessarily differ, and the general management of the ground, as to depth and staple, need not be precisely the same as for kitchen-garden fruit-trees under a dwarfing system. However, all orchards are not required to be alike, either in the number or size of the trees, or in the cropping, if any is connected therewith. Any person planning an orchard should be prepared to answer such questions as these: Do you desire vegetable culture, and to what extent; or, is it your aim to make that a totally subordinate affair? Do you wish it to be laid down in grass? Do you wish it to be a sort of appendage to your grounds, and to be used occasionally as a promenade by your friends? Do you wish to encourage full-sized orchard-trees; or, would you rather keep them within circumscribed bounds? Such matters as these must be decisively settled in the mind before a step is taken; for in proportion to the definiteness of the aim will be the degree of satisfaction ultimately attained. Each of these points I will now handle in detail, in order that the course of our subject may so proceed as to leave little to be desired.

It must by no means be considered as unimportant whether the vegetable question be examined or no; if vegetables must be grown, not only must different distances be given between the trees, but a separate mode of culture be pursued. If the aim be to devote as much as possible to fruit-trees, merely using the vegetable ground as "breathing" spaces, I should say that the tree-lines should be, for the ordinary orchard style, about twenty to twenty-four feet apart; but if a dwarfing system is pursued, perhaps about sixteen feet may be allowed. This is putting as low a distance as possible, consistent with the welfare of the trees. Those who desire a liberal supply of vegetables, and are desirous at the same time, through ample space, to give plenty of breathing-room to the fruit-trees, may allow half-a-dozen feet more. As for distance between the trees in the rows, I should say eighteen feet for ordinary standards, and fourteen feet for a dwarfing system. In all cases, let the lines be north and south, if possible, in order that the sun's rays may reach at least two sides of the tree. As in drill-cropping, so in the orchard; where parallel lines must be established, rather be reasonably close in the rows than between the rows. I am no advocate for crowded planting, for I have ever found such a course highly favourable to the breeding of the insect tribes, caterpillars, &c.; and no wonder, so much heat at times being imprisoned, as it were, for lack of a free circulation of air. It is for this very reason, conjoined with the avoidance of hoar frosts, through a free dispersion of air-moisture, that we frequently hear of orchards on elevated grounds "setting" crops of fruit, when those in the warm valley have failed. By the above distances, there would be several feet of cropping-ground in the orchard, especially whilst young; the cropping giving way annually, after the first three years, several inches on each side; of which more in the proper place.

The question, "Do you wish it to be laid down in grass?" deserves a little consideration. I certainly confess myself rather an advocate for the cultivation plan, provided justice is done to it, for several reasons. In the first place, people are tempted to plant trees too thickly when once a plot of grass is devoted to orcharding; and, in the second place, cattle, pigs, &c., are at times turned in unguardedly, and these soon lay the foundation of broken constitutions in some fruit-trees. Besides, there can be no question but much greater benefits accrue to the fruit-trees from a judicious course of culture, involving, as it does, manual labour occasionally, and, consequently, a more frequent observation of the fruit-trees; and certainly bipeds are not quite so dangerous in the orchard as the quadruped class. How many orchards have we all seen in our day, in which,

here and there, a healthy tree was surrounded by invalids, in various stages of decay, the whole interlaced in a hedge-like manner. Such orchards, strange to say, have generally a grass sward beneath them, which really must point to some particular fact; this I here leave to the consideration of our readers. Still, circumstances occur which render it very desirable, if not absolutely necessary, to establish an orchard on grass; such being the case, we must see what can or ought to be done.

The next question is as to rendering the orchard a promenade, perhaps connected with the gardens. This requires that good exterior lines should be laid down, of sufficient breadth, and possessing greater walking accommodations than can be expected in the ordinary orchard. Here, one main line of walk or road should be carried down the side that is most eligible to enter at, and, if requisite, such a walk may be carried all round, with even a cross or intersecting walk if the orchard be extensive. These, however, are matters of mere convenience to the proprietors, and, of course, involve a little extra expense in laying it out; it may be done, however, without any loss of land. One thing may be here thought of—there should always be a cart-road provided to one side, and, in some cases, it will be well to unite the services of the cart-road and footpath.

The last preliminary consideration is, whether the proprietor aims at full-sized orchard-trees or mere dwarfs; the mind must be well made up on this point, or much disappointment must ensue. In settling this knotty point, the end and aim of the orchard must be well considered. In many cases the answer would be: "I want to supply my own house well, and to market all the surplus." Now, I do think, in the first place, that well-selected and well-managed dwarf standards, of moderate growth, will, in these times, pay much better than huge brawny-limbed trees, many of which will shade as much land as half-a-dozen well-managed dwarfs, of kinds selected with reference to their habit of growth, as well as quality, &c. Let any one in the vicinity of ordinary orchards of some age examine well the character of overgrown trees, and he will find that in many of them the true bearing wood, if pruned away, might be stuck on the head of a moderate-sized dwarf standard; all the rest is mere timber, which has to be sustained, although of little value. It must, nevertheless, be admitted, that some huge orchard-trees of good kinds and habits produce immensely, and, of course, are very profitable; yet, it must be remembered, that such are, for the most part, kitchen fruit, or of very ordinary stamp. Although these papers are intended as a tolerably complete guide to the general culture of out-doors fruits, yet it will be seen that certain sections of our subject have, of necessity, a special bearing: thus these remarks apply more especially to the Apple and the Pear.

As I have here taken what may be termed a commercial view of the question, I may, perhaps, be permitted to look a little further into that portion of the subject. It is a notorious fact that, in later years, there has been a growing tendency in the possessors of gardens, orchards, &c., to turn everything to account, and to esteem nothing as trifling. A prodigal, or lavish expenditure, irrespective of profit, in out-door economics, belongs to a bygone state of things. "Advance" is the word: and this involves a somewhat nicer appreciation of the value of things than was deemed necessary some fifty years since. "He who despiseth little things shall fall by little and little." In dealing with such subjects, then, I suppose a case in which the proprietor, with an earnest desire to provide for his own wants, is equally earnest so to contrive matters as that all surplus shall be turned to good account.

Now, with regard to the Apple and the Pear, more especially, we all know that it is most important to use the utmost discrimination in selection; above all, as regards small gardens or orchards. Where the proprietor has a pretty good demand in his own family, it is, of course, all-important to select fruits on the score of quality, whether for stewing, baking, or the dessert. The latter are well known to be of superior quality from dwarf standards.

I before adverted to the propriety of having a passage for a cart at one end of an orchard; this will at all times economise labour—much wheelbarrow work is expensive, and too apt to infringe on the ordinary routine of business. As top-dressing will at times be needed, it would be well to

establish a compost heap, for which a nook must be set apart. Here may be drawn together, in a piecemeal way, any turfy materials, or scraps, which at any time may come to hand, such as turfy road parings, ditchings, pond cleanings, and anything of a strong vegetable fibre, or soils of a somewhat adhesive character. Such materials will occasionally come to hand, and should be eagerly stored up; and when a few loads are got together, some coarse manurial and vegetable matters may be turned amongst it, and then the whole ridged up to keep out rains. This, with a little age, will chop down in a mellow condition, and will constitute a material adapted to all the needs of an orchard, whether as top-dressing, or to assist in making "stations"—a practice hereafter to be detailed.

As in the enclosed garden, so in the orchard, especially where a dwarfing system is pursued, it is of immense importance to have plenty of water at hand; and it will be, in many cases, possible to establish a little pond or pit in one corner, into which all drainages may, if possible, be made to empty.

Lastly, let us advise that the most particular regard be paid to a thorough drainage of the orchard site before any operations take place—that is to say, provided any be necessary, and they most frequently are. Although most of our fruits rejoice in a somewhat adhesive soil, I do not know one which delights in a stagnant soil. Even the Black Currant, which so requires moisture, will fail in an unreclaimed boggy soil, or a strong loam with a wet bottom; and where this fails as to moisture, there exists not a single doubt as to the certain failure of all other fruits but the Cranberry.

The improvement of the staple or texture of the soil, about which so much was said when dealing with the subject of the kitchen and fruit-garden combined, is a matter which can scarcely be entertained in the majority of ordinary orchard cases, for several reasons. The site of a kitchen-garden is often a forced affair. Most persons, in establishing a new homestead, make the position of the kitchen or fruit-garden subordinate—its site is seldom a matter of selection as to soil; and in re-arranging matters connected with an established residence, a similar course is pursued. But with those who contemplate planting an orchard such ties seldom exist. A choice of soil generally presents itself, and surely no person would think of stepping out of his way to establish an orchard on a site so ungenial, that there could be little probability of the necessary outlay being repaid.

I shall shortly have to show how "STATIONS" requisite for fruit-trees may be made; and as this proceeding is equally applicable to the kitchen-garden and orchard, I need not here enlarge on the subject.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY, 20TH APRIL, 1853.

I VISITED Covent Garden to-day again, before the meeting; also Mr. Stevens's sale of fancy poultry, where the spangled Polands were put up and hammered down in Mr. Stevens's best style, at from 30s to 40s. a-piece, faster than I can write about it. The next breed was the Silver-spangled Hamburgs, and one pretty little hen was up to 32s. just as I was leaving the room, and, if the bidding went at the same rate as for Polands, for two minutes longer, this bird would come to about five guineas.

In the market, "wedding bouquets are made to order," but I did not see any wedding nosegay ready-made to-day; indeed they are frail things to be kept as a stock on hand, being now made of the purest and most delicate white flowers; they are best "picked in the sunlight which first falls on the bride." The style of making nosegays is fast improving in Covent Garden, but still you see some there that are put together most outrageously bad. The best made nosegay that I saw in the market this spring was in the *quartered style*. This is, by far, the easiest kind to make; and two colours, or two kinds of flowers, will make as good a show in it as twelve or twenty kinds of flowers will do in any other kind of nosegay. A double white *Camellia* for the centre: but let us have it so that all may understand the make and shape.

Suppose a parasol stretched open and placed between two tables that stood just one inch apart: the ends of the ribs would rest on the tables, and the handle would hang down between them, and out of sight. The diameter across the bottom is a matter of taste and convenience; it may be six inches, but not less, and it may be two feet six inches, or more or less, down to the six-inch bottom. The best in the market was about eight inches with flowers, two inches more with the leaves under the flowers, or guards, and three more inches with the fringe of fancy cut paper, on which the nosegays rest. The fancy paper thus used in the shops should never be used in the drawing-rooms, nothing but the flowers and guard leaves being admissible where good taste reigns. The rise of these nosegays, from the level of the tables to the crown of the parasol, is only three inches, and that is too much for the diameter. Where the handle passes through is called the centre or top, and there a large white *Camellia* is placed, and there must be a handle to this flower as well as to a parasol, and it is by means of this handle in the middle that all the other flowers are kept in their exact places; from the top of the parasol, six ribs spread out at equal distances, these ribs are shown on the nosegay in a single row of white flowers for each rib, and, at this season, single or double white *Hyacinths* are used for individual flowers or pips, in a row just touching one another; the spaces between the ribs or rows of white flowers are called quarters, and all the quarters are filled in with *Double blue Violets*, or single blue ones, as regularly placed as tiles on a house. Then there is a row of the leaves of the *Rose-scented Geranium* round the bottom, and projecting just one inch beyond the flowers, and this simple contrivance with these very simple and very common flowers, looks as rich, and contrast as well as any set of flowers ever did, or ever will do. There is nothing else in flowers that I can think of just now that would answer better, supposing that *fimbriata* was the white *Camellia* used. The next best contrast in a quartered nosegay of one ground colour like this, would be ribs of the Black *Hyacinth* called *Prince Albert*, and the quarters of pure white flowers; but then there is not a flower in creation to do for the centre, unless you choose a small dark *Dahlia*; there is not a *Rose* dark enough, and indeed no dark flower would come up to our idea of a virgin nosegay, therefore, we must use a neutral colour; the best *Camellia* for that is the variegated one called *Albertus*; then the centre and ribs are of *Prince Albert*; and if you fill the quarters all round with the *Queen Victoria* fancy *Geranium*, you will have as royal and as loyal a nosegay as any of Her Majesty's loyal subjects.

At Regent Street, I found the room more than crowded, and a large portion of the Fellows had to stand all the time. The room was gay with spring flowers, but nothing very new, nor out of the common, except a large dish of ripe *Tomatoes* from Algiers—the first dish of ripe fruit of this kind I ever saw in the spring. There was nothing stated as to how the plants were managed, and so on, and very likely many went away with the idea that the *Tomatoes*—the common sort—were the growth of this season, which they certainly were not. The plants were grown, and the fruit was up to its full size last autumn; but the ripening may have been the work of '53; at any rate, for those who like them fresh and fresh all the winter, and as long as they can, for making messes of them in the kitchen, it is a comfort they can have them so, if they choose to pay for them; and a greater comfort still, that all the world are not obliged to taste the compounds. Very good green *Peas*; fine, short, dumpy early *Carrots*; *Artichoke* heads; crisp *Lettuce*, and juicy *Radishes*; small, long, green *Asparagus*, and very large, white, "drumstick" *Asparagus*, all from abroad, and shown by Mr. Solomons, of Covent Garden, who has had the state of the market, in these respects, well represented before the Society all this winter, very much to the advantage of all parties: the Fellows seeing in their own room, in Regent Street, what was in season, and could be ordered from, Mr. Solomons for large party dinners—nothing like killing two birds with one stone all the world over, with or without a prize.

Mr. Davies, of Oak Hill, East Barnet, sent a large dish of beautiful *Black Hambro' Grapes*, and Mr. Fish, of our green-houses and gardens, sent a dish of fine forced *Strawberries*, with a letter telling how he "did" them—always a good

plan when the writers, like him, can write sweet and short. All our readers know how he does everything that way, and that lessens my work now. Mr. Myatt sent a highly-coloured dish of his *Victoria Rhenarb*, now so well-known and appreciated as the name it bears. *Miller's Late White Brocoli*, and *Dickson's Waterloo*, were in the room from somewhere; but, with the exception of Mr. Bates' Brocoli (page 40), there was not a head of Brocoli fit to be seen, as far as I could see, about London since the end of February. I have no doubt, in my own mind, that many a good gardener, and deserving, faithful servant, will lose his place and his character this spring for not being able to supply the kitchen as "we us'd to have it." But all the philosophy, science, and experience under the sun, can no more teach a gardener to provide against the laws of nature, or the decrees of the God of nature, than my feeble pen can persuade the uncharitable, and the god of mammon, to relent and be appeased for this once. Before we may experience such another season, however, let us hope that all of us will be better and wiser than we now are, and more able to understand all the affairs about the garden and about each other.

Cinerarias.—The names on the lists of this elegant and most useful flower are now so outrageously numerous, and more than one half of them are such milk-and-water-looking clouds, for colours they have none, that no mortal can bear the sight of them except he be a florist, so that at last even the aristocratic Horticultural Society are obliged to step out of their high boots, and show the ladies of the land what is really to be met with worth looking at in this flower round London, for at their country seats they would not tolerate our best London *Cinerarias* for two days running. So the Society sent half-a-dozen of nice dwarf gay-looking *Cinerarias*, and almost every lady in the room took down the names. *Beauty of St. John's Wood* is the best known of these; it was also the smallest flower of the lot, a white centre, and crimson edged. *Promethus*, a deep purple; *Elegantissima*, a fine blue; *Charles Dickens*, a good purple; *Rubella*, in the way of *Beauty of St. John's Wood*, but a much larger flower. Also a large *Cytisus rhodophena* full of flower; *Rynchospermum jasminoides* and *Henfrya scandens* literally covered with bloom; the best kind of *Tropaeolum Lobbianum*, called *Triumph de Gaud*, a most useful flower all the winter through; *Diosma capitata*, pretty nigh a yard through; *Acacia paradoxa*, a half-standard plant, in fine yellow bloom; a low, wide-spreading *Azalea indica*, called *mutabilis*, with Heaths and Epacris, and other things all very useful for spring decoration.

Messrs. Henderson, of Pine-Apple Place, sent two exquisite specimen plants, one, *Eriostemon scabrum*, a very twiggy, graceful plant, with small shining leaves and white flowers, and *Boronia tetrandria*, with bluish-pink flowers. Also examples of *Daviesia pungens*, a dwarf acacia-looking plant, quite covered with small pea-flowers of a colour between cream and yellow, with *Brachysema acuminata*, with crimson pea-flowers, and *Pimelea quidia*, with heads of white flowers, together with a large plant of *Tetralthea ericifolia*, with light lilac flowers—all greenhouse plants of the first water, and most useful as coming in so early in the spring.

There were a nice lot of seedling *Cyclamens* from Mr. Myatt, differing slightly from each other when looked close into, but not worthy of being retained as varieties. There was a nice plant of *Dielytra spectabilis* from the garden of the Society, about which it was stated, that in an open border the late frost had injured some plants of it considerably, but the border was too wet for it. My own plant of it was three inches high, and did not suffer in the least, though as much exposed as could be; and there is a *Deutzia gracilis* not far from it, which I planted last September only, and is no more than a few inches high, but it stood unaffected in the least degree; and there was a small plant of it at this meeting, to which the attention of those present was specially directed, as being the prettiest and most useful little shrubs yet found in Japan. Everybody should have it, and those who can ought to have it in flower from January till the middle or end of May; it is also as much of a wedding-flower as any we have, and seems to have been made on purpose for hair wreaths, or for sprigs singly to use of an evening, in two distinct forms, as imitations of

the Lily-of-the-Valley while in bud, and in its own strength when it opens.

After all, perhaps, the best plant in the room was *Berberis Darwinii*, from the collection of the Society. It is difficult to conceive a more graceful style of flowering than this *Berberis* presents, or a more easy plant to keep. It seems to be the hardiest plant known, growing where the roots must have been in stagnant water through the whole of this long winter, and yet no plant braved the frost better. I have not heard of this plant having yet seeded in England, and it may require some peculiar treatment, or more rest from the propagator, and more age to the bargain, to enable it to seed. But the climate it comes from is very peculiar: often cold and stormy, and the air almost always loaded with moisture; that of the island of Chiloe, and on the mainland in Western Patagonia, where, as we were told, it grows in bogs in some localities, and in dry places also, on to the Straits of Magellan. Like the now common *Berberis aquifolium*, we can never have too much of the Darwin species, and we shall never have enough of it until we find out how to seed it. It does not seem that our cold dry easterly winds in the spring are favourable to the setting of the seeds of any of the American *Berberis* from beyond the Equator; perhaps a low temperature and extreme moisture in the air at the time they are in flower would suit them better, and cause them to seed; and if so, we should plant some on purpose for seeding by the side of ponds, lakes, or running water; also in a cold pit, to be kept very moist indeed all the time they are in flower, and perhaps, too, a saucerful of water kept under the pots at the time might assist the setting of the fruit. At any rate, this *Berberis Darwinii* would not take much harm that way for a time, seeing that it is a bog-plant, although it will grow in any ordinary border.

The large *Stamtonia latifolia*, which is fully exposed in Mr. Jackson's nursery here, is now as green as a Portugal laurel, and probably is more hardy; and at the last moment I have just learned the *Libocedrus chilensis* is quite hardy—but more on this next week.

D. BEATON.

IMPROVING ECONOMICALLY A NEGLECTED GREENHOUSE.

(Continued from page 61.)

KEEPING in view the primary matters referred to last week, and that the main stay for future display must rest chiefly on a few cheap flower-seeds, I will now proceed, shortly to state how this object may be effectually gained, if not fully for the present summer, in the winter, spring, and summer, that will succeed, and I will glance, first, at the treatment necessary for the desired object, to be followed with the plants already in possession.

CACTUS.—I presume you have not any of the *truncatus*, or jointed-stemmed varieties, as these chiefly bloom in winter and spring. In a back volume you will find an article on the subject. Most likely the soil about the roots is in a sour, sodden state, and each had better be repotted in sandy loam, with pieces of broken bricks and lime rubbish, freely intermingled. The Cactus tribe, when in health, will stand rich manurial applications, but you must no more think of such a thing in your ease, than you would think of giving beef to a sickly infant, whose digestive powers were wholly out of order. If you are to be rewarded with flowers this season, the buds will now, or shortly, be showing themselves; but whether they do or not, your present treatment should be the same. Set the plants in the closest and warmest end of the house, give but little water at the roots until you see proofs of fresh growth, but as we presume the stems are brown and lanky, syringe them with tepid water several times in a day, or bathe them with a sponge, for in all such cases it is better to make the plants absorb by their stems, than to glut the roots with water before these roots are freely acting. When that is the case, you may mulch the surface of the pot with rotten dung, from which all worms, &c., have been extracted by drying. If, however, the stems are green and very succulent, no syringing or bathing will be requisite, and just enough of water must be given to keep them from flagging, and stopping growth for two months longer; giving

the plants, however, an airy, and light, instead of a close or a slightly shaded position. If any of the plants bloom, let them stand in an airy, shady place, and the flowers will be longer preserved; and after blooming, keep the plants in a warm corner, well syringed and watered, for a month or two afterwards—previously removing any old exhausted piece of a stem—giving the plants first a slight shade, and by degrees more light, until they are exposed to the full action of the sunbeams, and then in August remove them out-of-doors to the south side of a fence, where you can contrive to keep the rain off them, and yet give them every ray of sunshine, turning the plants at times, that each part may have an equal portion of light; watering and syringing at first, to prevent a sudden check from the increased evaporation from the stems, owing to sudden full exposure, but giving *less and less water by degrees*, until by the end of September you cease watering altogether, and do not resume it until you wish the plants to grow in March or April, with the exception of sprinkling with the syringe in a sunny day in winter, if the stems are getting rather shrivelled. This resting by dryness, in unison with full exposure to sunlight after wood is made, is the secret of growing these succulents successfully, and, so far as our climate will permit, is merely an imitation of the circumstances in which the plants flourish in their native wilds. If the plants do not bloom—as soon as they have recovered their fresh aspect—they may be put out-of-doors *earlier*, such as the middle of July; or they, as well as the others, may be kept in an airy part of the greenhouse, and fully exposed to the sun-heat. If even then near the wall, where the sun beats upon, it will be better. Why we recommend chiefly a fence, such as a wall out-of-doors, is, that the heat there is much more intense than can ever be diffused through a well-aired greenhouse. In most of the beautiful kinds, without a combination of this light and heat, accompanied with partial dryness, and then by the removal of the water-pail altogether during one season, it is vain to expect them to produce flower-buds in the next. A bright autumn is, therefore, of great importance to the Cactus grower, and the easiest cultivated of them are beautiful. I have lengthened these remarks, because convinced that every Cactus grower among our amateur friends, by thinking them over, and enquiring into the groundwork for them, will find themselves insensibly involved in that most delightful study—the climatic and local relations of the plants they cultivate; a science, which though among us yet in its infancy, will ever furnish, if not the identical practice in our climate, at least the key for opening up the way to successful culture. I may just repeat, that in starting into growth next spring, it will be preferable to swell the stems by means of the syringe or sponge, instead of first soaking the roots. House the plants by the middle of October.

GERANIUMS.—You have not stated what tribes you possess—Scarlets, Florist's Pelargoniums, or the newer Fancy kinds. Our remarks will, therefore, be very general, merely premising that there is little difficulty in getting scarlets and the fancies in bloom by this time, if kept in small pots. You were right to shift all your plants, if the soil was sour and ill-drained; but let your shifting again proceed upon system. A four-inch pot will furnish nice early-blooming plants. Next season you will be enabled to indulge in specimens for size. Set apart now all the forwardest best-looking plants for early blooming, and do *not* shift them any more. If flower-buds are not now showing, they will soon do so, after the roots get to the sides of the pot. When well knotted with flower-buds, but not before, apply manure-water, weak, and about 60° in temperature, and you will obtain large heads of bloom. Meanwhile, look out a second lot, the next best, but showing little inclination for blooming. As soon as the pots are getting filled with roots, if the said pots are from three to five inches in diameter, shift them into a size a little larger; but if already in pots six inches in diameter, and the roots getting to the outside of the pots, do not shift at all, but remove a little surface soil, top-dress with half-an-inch of rotten manure, one year old—cow-dung would do well—and, if you do not like its look, sprinkle over with a little road-drift, or other soil. Now, both these processes are intended to encourage growth, and to discourage flowering; and in either case the bloom will come from three weeks to a

month later than if neither shifted nor stimulated by a cool natured manure. Still, there is a third lot—the weakest-looking. Well, encourage them to grow, giving a little manure-water at times, *after* the sickly tinge has been exchanged for robust health; stir up the soil on the surface of the pot, much as a market-gardener would fork among his cabbages, only do not hurt the roots. Turn out a plant now and then, and when you find the healthy roots are getting to the outside of the ball, go over the plants, and nip out the points of the young shoots that are at all strong. Some may have only one shoot—stop that; some may have three equally robust—stop them all; some may have two strong and two weak—stop the strong ones, and this ultimately may furnish you with six or eight shoots of equal strength. When these stopped shoots have pushed out others from the axils of the leaves from half-an-inch to one inch in length, shift the plant then into a larger pot, and thus you will have another succession of blooming plants; so that from Geraniums alone, and this persevering attention, you may have bloom in your house, if kept *cool* and airy, from the middle of May to the middle of September.

Cuttings of Geraniums, taken off now, and inserted in pots in a shady part of the house, potted and grown on, but *not* stopped, will flower late in autumn. Those that bloom first (supposing your stock are chiefly Pelargoniums) will be ready to come out of the house in July, at the farthest. Place them, at first, in a shady place, so that no great check be given them. In a few days remove them to an open position, full in the sun. Water as usual at first, but curtail by degrees, so that the soil may get dryish, as this, with an unshaded sun, will ripen and harden the stems. When these are well browned, cut them down to within one or two inches of their base. If, notwithstanding this ripening, the stumps should be inclined to bleed, daub over the wounds with a mixture of charcoal dust and lime. The stems cut up into cuttings will strike freely in sandy soil in any open border. The cut-down plants should be kept not dry, but *dryish*, and slightly shaded, until they begin to push afresh; and when the shoots are three-quarters-of-an-inch in length then move them to the potting bench, shake away the soil from the roots, prune the straggling roots a little, and repot into fresh soil, and into smaller or similar-sized pots. These must be kept shaded a little, then fully exposed, and housed in good time in October. Do not overburden yourself with *numbers*. Of your small plants, and your room, a dozen of each succession may be chosen this year, and half as many the year following. If you keep the old plants as just mentioned, these will not only prove the foundation of handsome specimens, but require in all their stages more room to grow them in. Where, however, much bloom is required from little space, pots from four to six inches in diameter ought to be the general size used.

CALCEOLARIAS.—These, whether shrubby or herbaceous, may be *now* managed upon a similar principle. We shall tell how to have the herbaceous ones from *sowing* before long. Only keep this in view—herbaceous ones bloom best in spring and autumn, and although shrubby ones will bloom all the year round, they soon become sickly in small pots in a greenhouse, chiefly because they cannot endure the heated state of the pots at one time, and their coldness at another. Hence the comparative freedom from alternations in moisture and dryness, heats and colds, is the reason why shrubby Calceolarias succeed so well when planted in the flower-borders in summer. Herbaceous kinds do little good out-of-doors in summer, because their large flowers become the sport of every blast. If you resolve upon keeping some in-doors, whether shrubby or herbaceous, three modes will help you to success. Place each pot inside a larger one, and let the space between them, top and bottom, be filled with moss: the sides of the plant pot will thus be kept cool. Or you may plunge several pots in moss in a vase, basket, or box. Or you may plant the plants out in earth in such a receptacle. And then, lastly, after the end of April, water and syringe with the *coldest* soft water you can procure, and keep the plants in the coolest and airiest part of the house. When showing bloom, top-dress with two-year-old rotten cowdung, and the bloom will be rendered strong and fine.

FUCHSIAS.—To get early bloom do not prune much. Better get what you can from the old plants, and start fair for another season. See notes on Fuchsias lately. Stubby,

short side-shoots from two to three inches in length, taken off your old plants, or from better kinds of a neighbour's, inserted in sandy soil, a bell-glass placed over them, and kept shaded from bright sun until they had struck, would furnish nice plants for blooming in September.

VERBENAS.—Follow a similar plan to that recommended for Geraniums, only making two lots instead of three. Let the first remain in small four or six-inch pots to bloom early. I have had showy plants in three-inch pots. The other lot, not planted out-of-doors, stop, and shift on, until they fill six or nine-inch pots, and are neatly trained out with small twigs, or are fastened to a flat, next to invisible, trellis, and so placed that you can look down upon the plants, and then using open, light, rich soil, giving the plants plenty of air and light, enough of water at the root, and plenty of the syringe over the foliage, you will obtain flowers such as can rarely be seen under out-door culture. The water must not touch the flowers. Two or three plants of the same kind may be put in one pot, and thus a good display sooner obtained. When the large plants come into bloom the small plants may be removed, or pruned, repotted, kept out-of-doors, and then brought in as the others begin to fade. With this tribe alone, and your plants now small, a rich and fine effect may be produced from May to the middle of October. Except after potting the plants must have no shade, and abundance of air to keep them healthy and stubby. Damping the floor and shelves often will greatly assist all the plants mentioned. These kinds alone may thus be made to present a very gay appearance.

BALSAMS.—See a late article. Sown in the greenhouse, potted off when three or four inches high, shaded a little, and shifted again into six-inch pots, will yield stubby, strong plants, such as with difficulty can be obtained by hotbed coddling.

LOBELIA.—Small-flowering blue kinds. As much seed as would lie on the point of the finest quill would be enough of any of them. *Gracilis*, *Erinus maximus*, are trailing-stemmed ones; *ramosa* has large flowers, and is upright in its growth; *ramosa rosea* is similar in habit. These would bloom in July and August.

NEMOPHILA INSIGNIS and MACULATA.—These bloom beautifully in spring and autumn, but do not stand the summer well without a little shade. They should be sown thinly in a six-inch pot, and then thinned out to one or three plants. I have had the first of these (one of the very best hardy annuals we possess) fine in a house in summer so treated, but the pot was placed inside of a larger one, the space between stuffed with moss, then set in a saucer of water, and this moss kept moist, and no water whatever applied at the surface of the pot containing the plant. Sown in September, it would bloom splendidly from March to May; and who does not love its beautiful flowers?

COLINSIA BICOLOR.—This hardy annual sown now will bloom in two months. Sown in October, there are few things more splendid in a house during the spring months.

MIGNONETTE and VIRGINIAN STOCK will come much earlier than out-of-doors. The second will be in bloom in six weeks, and is sweet and pretty; and who admires not the first? Sow in August and September for plants to bloom in March, April, and May.

BRACHYCOME IBERIDIFOLIA, a beautiful blue annual, too tender to thrive in most places out-of-doors.

SALVIA PATENS.—This, sown now, will yield its fine blue flowers in August and September.

SALPIGLOSSIS.—This is a beautifully-marked group, too tender for most places out-of-doors. Sown now, shaded and protected a little after being pricked out, three or four in a four-inch pot, and again separated, it will bloom from the end of July to the end of September.

Petunias, *Schizanthus*, and *Maurandya*, of sorts, *Anagallis indica*, *Kaulfussia omeioides*, *Celsia urticifolia*, *Nierembergia gracilis*, will bloom in the end of summer and autumn.

Small **MESEMBRYANTHEMUMS**, such as *cordifolium*, *crystallinum*, and *tricolor*, are interesting low-growing succulents, that would bloom in the end of summer. *London intermediate stocks* would bloom late in autumn; but this, as well as many mentioned, are best sown in autumn for early spring and summer display.

R. FISH.

THE POLYANTHUS.

(Continued from page 62.)

WINTER TREATMENT.—This commences about the end of October. Our readers will remember that in the last number I recommended a more open situation for the latter months of summer, or, rather, autumn. From that situation they must now be removed into their winter quarters.

As I remarked before, the Polyanthus is more hardy than the Auricula, and, consequently, where there is a tolerably large collection, they will do better if kept in a separate frame, where they can have more air given to them, and rather less protection from frost. I have had the pots so hard frozen that they could scarcely be lifted up, and yet the plants did not suffer any injury, but flowered well the spring following. The care necessary is, to place them upon a bed of coal ashes, sufficiently thick to prevent worms boring through it and entering the pots. At the time they are placed under the frame let each pot and plant be examined. If the pots are green and dirty they should be clean washed, the hole at the bottom of the pot should be examined, to see that it is quite open to allow the superfluous water to run off freely; the soil on the surface should be stirred, and all weeds and moss cleared away, and a thin top-dressing of fresh soil put on, every decayed or decaying leaf removed, and then the plants will look clean and healthy, and show they are cared for as they ought to be.

When they are all cleaned and put in good order place them in the frame. If the leaves project over the edge of the pots, let them stand at such a distance from each other that the leaves of one plant do not touch the leaves of the others surrounding it. In the winter months they require very little water;—only just enough to prevent them flagging.

I had almost forgotten to direct an examination of the labels or tallies, to see that they are all legible, and likely to keep so till spring; should they be illegible, or nearly so, renew them at once. Should the weather be very severe, that is during hard frost, protect them every night with a covering of double mats, or, with what I prefer, good watertight wooden covers. This covering, though rather expensive at first, is the cheapest in the end, and is much more tidy than any other material used for this purpose.

PROPERTIES OF A GOOD POLYANTHUS.—The plant should be healthy; the foliage large and abundant; the stem should be stout enough to bear the truss well up above the leaves, which should cover the pot, and rise up in the centre; from the centre of the leaves the stem should rise; the truss should consist of at least five flowers, and the footstalks of each flower should be able to support each bloom level with the rest. Each flower, or *pip*, should be round and flat, neither inclined to cup or reflex. The pips should be divided, near the outermost edge, into segments; each division, or *segment*, should be slightly indented or scalloped in the centre. Each flower should have a yellow centre, or *eye*; in the centre of that there should appear a *tube* containing the anthers, but the pistil should not be seen. This yellow centre, including the tube, should be of the same width as the *ground* or *body-colour*, which colour should either be a rich dark crimson or a bright red. Round this body-colour the *margin*, or *lacing*, should appear of an uniform width surrounding each petal, and continuing down the centre of each to the yellow eye. The colour of this lacing, or margin, should be uniform, whether it is sulphur, lemon colour, or clear yellow.

LIST OF GOOD KINDS NOW IN COLLECTIONS.

Alexander (Pearson), red ground; a good old sort.

Argo (Kearsley), red ground; eye and lacing bright yellow; pips large; a new and fine variety.

Beauty of England (Maud), extra fine.

Brilliant (Kearsley), red ground; pips medium size.

Black Prince (Faulkners), dark ground; large pips.

Coquette (Kearsley), dark ground; pips large; a late bloomer.

Canary (Kearsley), dark ground; lemon edging; pips large.

Duchess of Sutherland (Kearsley), dark ground; lacing light yellow; very fine and new.

Defiance (Fletcher), extra fine flower.

Duchess of Kent (Piggot), fine, and rather new.

Earl Lincoln (Hufton), dark ground; extra fine.
Flying Dutchman (Kearsley), dark ground, with large pips; a late bloomer.
Felix (Kearsley), red ground, with large pips.
Forget-me-not (Kearsley), dark ground, with large pips.
Emperor Bonaparte (Turner), red ground; medium size.
Fire King (Erringtons), rich scarlet ground; well laced; fine.
Formosa (Barnard), dark ground; pips large.
George the Fourth (Buck), a large dark flower; extra.
Highland Mary (Craig), a good constant variety.
Kingfisher (Addis), dark ground; large pips; extra fine.
Invincible (Crawshaw), dark; extra.
Lord John Russel (Clegg), very fine variety.
Lancer (Bullock), extra; dark flower.
Magnificent (Kearsley), red ground; eye and lace bright yellow; new and fine.
Minerva (Kearsley), dark ground; eye and lacing lemon colour; new and extra fine.
Orion (Kearsley), dark ground; eye and lacing golden yellow; new and fine.
Prince Arthur (Kearsley), red-crimson ground; eye and lace sulphur colour; pips large; extra fine and new.
Prince of Wales (Berrenger), a fine variety.
Princess Royal (Colliers), a good show variety; extra.
Prince Regent (Cox), dark ground; pips large; a good old variety.
Portia (Kearsley), dark ground; pips medium size.
Royal Sovereign (Gibbon), extra; dark ground; large flower.
Sylph (Kearsley), dark ground; eye and lacing bright yellow; extra fine.
Tantarara (Fillingham), dark ground; pips very large; a bold, good flower.
Telegraph (Stead), red ground; a fine old variety.
Victoria (Kearsley), red ground; pips medium size; fine form; a late bloomer.
Volligour (Kearsley), red ground; large pips; yellow leaves; fine.

T. APPLEBY.

LYCOPODIUMS.

(Continued from page 43.)

SUMMER TREATMENT: POTTING.—Having ready the compost, as described in my last, and the plants being in such a state as to require larger pots, proceed to perform that operation. The best time of the year for this work is about the middle of April, though it may be done through most of the summer months, if the plants grow rapidly, and fill their pots with roots; especially if large specimens are required. There are no plants that show the effects of neglect in this point more than Lycopods. If the pots are too small, the plants soon lose their healthy, brilliant green; the tall growers become naked of leaves at the bottom; and the whole plant becomes a sickly yellow, which renders it a very unsightly object. To prevent this, pot early, whilst the plants are of a good colour, and pot again in time to keep them so. Though they love plenty of moisture at the root, yet they cannot bear stagnant water: hence it is necessary to drain the pots well, and place a thin layer of moss over the drainage to prevent its being choked up by the finer particles of the compost being washed down into the drainage with the frequent waterings. The pot being thus properly drained, and the compost being neither wet, dry, nor cold, take a plant, turn it out of the pot, pick out the old drainage from amongst the roots, and as much of the old soil as can be removed without injuring them. Then put as much compost in the pot as will raise the ball nearly level with the rim of the pot; fill round the ball with the fresh soil, pressing it down gently till the pot is quite full; then give the pot a smart stroke or two on the bench, pressing down the ball and soil level, leaving about half-an-inch for small plants, and an inch for large ones, of space below the rim of the pot. This space is to hold water, so that when the plants are watered there may be sufficient to thoroughly wet the whole mass in each pot. Then give a liberal watering to settle the soil close to the roots, and replace the pots on the stage or benches where they are to grow.

All the Stove species thrive best in rather shady places.

I used to find them do well on the kerb-stone round the pit in the stoves and orchid-house, where very few other plants would live and thrive.

WATERING.—These plants are found growing in shady thickets where there is a continual moisture; and, therefore, to keep them fresh, green, and healthy, they should have a frequent supply of moisture both at the root and top. The syringe, then, is a most useful instrument; and they will thrive all the better if they are syringed twice or thrice a day in the hot days of summer, especially all such as throw out roots from the branches in the air. An exception occurs to this practice of syringing so freely in *Lycopodium casium* and *L. caesium arboreum*. If these are syringed abundantly they lose that rich, glossy, grey-blue colour for which they are so much admired. Once in every two or three days will be sufficient for them to keep them healthy. This rich colour will be obtained and preserved best in a shady place, with a high moist temperature.

The tree Lycopod grows very rapidly, and, on account of the fronds being large, spreading, and heavy, it is necessary to support it with stakes. I used for large plants, in eleven-inch pots, five upright stakes, kept steady, and at equal distances, by a ring or hoop of the same diameter as the pot; each stake was tied to this ring, which kept them steady and in their place. To these stakes so secured, I tied each frond as it was produced from the main stem. They formed, then, five upright dense bushes, covered with their richly-coloured leaves, which colour I preserved by never allowing the sun to shine upon the leaves, and using the syringe but seldom.

HEAT.—All the plants of this genus well bear a high temperature. During this season (summer,) I have had the thermometer in the middle of the day, with sun, as high as from 85° to 90°, and these plants seemed to delight in such a high temperature, growing rapidly, and of the liveliest colours. Some of the greenhouse species, indeed, grew rather too rapidly, over-running their pots, and hanging down over the edges; but then they are so easily propagated, that when they became unwieldy or unsightly I had no hesitation in casting them to the dunghill. Some of the low-creeping kinds I have cropped off close to the soil, and in this high, moist temperature, they almost immediately pushed forth fresh shoots, and formed fresh beautiful patches of the liveliest green. The great heat, however, is not absolutely necessary, and, except orchid growers, very few cultivators have a house heated so high. It was in the orchid house that I cultivated them principally myself, and much admiration they always attracted. They will grow, however, very well in a common stove, the heat of which should never exceed 70° to 75°. Some species thrive pretty well in a greenhouse; these are *L. denticulatum*, *L. apothecium*, and *L. helveticum*. In this house I would cultivate all the British species, of which the most beautiful is the *L. clavatum*, or Club Moss, as it is commonly called. These hardy species may be grown very well in a cold pit, but they are worthy of a place in a greenhouse.

WINTER TREATMENT.—It is during this season, when flowers are scarce, that the beautiful green and purple shades of these plants show to the greatest advantage. The only difference in culture is the giving less stimulants to growth, such as heat and water; also the syringe must be dispensed with, and the plants just kept slowly growing.

T. APPLEBY.

(To be continued.)

RAMPION—ITS CULTURE AND NEGLECT.

THIS plant being of humble growth and pretensions, and, in some measure, attended with more trouble than is agreeable at the time of preparing it for table, has been treated with less regard than its merits deserve. Forming, as it does, an important adjunct to our salads, at a time when variety in that way is much wanted, it certainly merits more attention than is often paid to it, while, to many cultivators, it is entirely unknown. Should there be many such, it may not be out of place here to say that the plant forms one of the large family of Campanulaceæ, or Bellworts; and, like several more of the family, is of a low growth, until the flower-stems shoot up, when they present a spike of two or three feet high, and, as such, are tolerably well clothed with

flowers of a deep dark blue colour, and look quite as well as many plants whose names are now before the floral world. However, we shall have something to say on this matter hereafter.

In the first place, this Bellwort is, like many others, more fond of a dry, sound soil, than of a damp one, and, consequently, a nice, dry, well-pulverised border must be prepared for it, sufficiently large on which to sow all the quantity that is likely to be wanted. On this soil the seeds, which are exceedingly small, may be sown broadcast, after the ground has been made smooth at top, as well as the under stratum well broken and free from hard lumps, or other impenetrable matter; for, as we have said, the seeds are very minute, and, therefore, not likely to vegetate, when, by the roughness of the ground, they get buried some distance below the surface; besides which, any description of soil, not well pulverised, is not likely to allow their roots to descend in that straight, tapering condition which constitutes their usefulness as an article for table purposes; in fact, on rough, cloddy ground, instead of their forming a nice tapering root in the shape of a carrot, they prefer sending out a number of small rootlets, clasping and surrounding those cloddy lumps they were unable to penetrate through, and in the end a mass of plants is produced better calculated for transplanting with balls in winter than taking up for salad purposes at that time.

A soil made too rich by dung, or other stimulating matters, is likely to be attended with equally unsatisfactory results, for, like carrots and similarly-rooted plants, the production of a mass of small, or forked, rootlets is the result. Where a choice of situation exists, we would advise one not too much exposed to the mid-day's sun, or rather not exposed to the whole day's sun. We have frequently seen a Rampion do very well on a wall-border, with a west aspect; by this they get a little shade, and not too much, so as to enable the root to luxuriate during the summer months, without suffering from a too dry soil, and the consequent tendency that such has to force them into premature flowering, from the same cause that a dry, hot soil occasions lettuce plants to "run to seed." This, however, is not always the case with the Rampion, because it is more of a biennial than the lettuce, but, at the same time, its table qualifications are much injured by a too niggardly supply of food calculated to promote its growth. Taking, therefore, all together, we advise the Rampion to be sown on a deep, well-pulverized soil, and one on which the enriching matter that seems necessary to add must be buried, so as not to be nearer the surface than six or eight inches. By being there, the tips of the roots are encouraged to penetrate that far in search of such food as they mostly require, but if the ground be in good condition there is no necessity for adding any manure, but to dig and work it well over several times, and, lastly, making the top very fine, when the seed may be sown. A few boughs, as for instance, pea-stakes, laid over the bed, will, in a great measure, break the influence of the sun's rays upon the bed, which may then be watered.

Thinning must be resorted to in time, otherwise it is difficult to accomplish it after the plants have attained any size, as they are liable to become so entangled together as not to be easily separated, when of a large size, without some injury done to those intended to remain; however, it is not necessary to make them very thin—about four or five inches apart, each way, will suffice, and even less, as the roots, when full grown and dressed for table, are not larger than ordinary market radishes, and seldom can be obtained so straight, but this is of less consequence, provided they be large enough; while, in dressing, it is no unusual thing to leave a forked root if it be of any size. Although the necessity of their being so straight as radishes does not exist, yet some degree of care is necessary to induce that healthy growth which alone furnishes the good plants from which suitable roots for table can be had.

The general growth taking place long before the principal demand is made on them, which is the winter season, we recommend them to be sown the first week in May, and thinned whenever they are large enough to handle; they will most likely get large enough for use early in autumn, and keep so unprotected for many weeks, and even months, for it is only in April that the growth of the plant, in the

shape of sending up flowering stems, renders the root useless for table purposes.

As we have said, at the commencement of this chapter, that some cultivators shrink from the trouble this latter production incurs at the time of preparing it, we think it right to mention to the inexperienced, that it requires peeling carefully to make it eat well; but after this is done there is no further trouble with it; and the peeling is a much less tedious job than might be expected, as, after a little practice, it will be found out that the rind peels off like that of a turnip, and quite as quickly. Of course, all the small spray must be cut away, and also the top, which is bushy, must be reduced to something like a reasonable size and shape; and after all is done, the root may be sent to table with a fair prospect of its becoming a favourite there; while, at the time in which it comes into use, and its differing much from everything else found there, its utility is further enhanced; and as its summer culture is simple, and not attended with much trouble, the little that attends its washing, peeling, and preparation for table, must certainly be allowed to be fully compensated for by its general merits and utility.

By way of conclusion, we may add, that any plants that may be left on the seed-bed in April might, if advisable, be planted in the parterre, in patches, to flower in May and June, prior to the principal and newer occupants being turned out then, as they flower abundantly, and, for a time, look well; of course, they might be removed as soon as the bed is wanted for something else, but coming in before the general mass of summer-flowering plants of the ordinary "bedding kinds," this forms no inconsiderable addition to the best of those used as intermediate ones, *i. e.* flowering before the others commence; while to succeed it, plants will be in the course of preparing elsewhere, in the manner recommended by our able coadjutors.

J. ROBSON.

FIELD CULTURE OF POTATOES.

THE nearer the culture of Potatoes in the field can be made to assimilate to that of the garden, the more advantageous to the crop it will prove; yet there must exist a difference in the management of the land when the plough is substituted for the spade or fork. In case a considerable breadth of land is intended for Potato culture, the use of the plough will prove most expeditious; indeed, the necessity for early planting, on account of the disease, and the scarcity of labour, has, in many districts, precluded the use of the spade altogether.

In the past history of Potato-culture, the autumn preparation of the soil has always been advocated; but since the attack of the mysterious epidemic by which this root is rendered so precarious in crop, it is now more than ever desirable that the land should be carefully tilled as soon as possible after harvest, in order that couch grass and root weeds may be destroyed, or removed from the land. When a good tilth has been obtained, plough the land into bouts, or ridges of two furrows, and in this state let it remain during the winter months. In the spring, land treated in this manner will prove in the best condition for early planting. Dry porous soils should be selected, as they are in condition for planting at the earliest period.

Upon soils irregular in character, or cold, requiring draining, it would be unwise to plant Potatoes; for whatever might have been the preparation of such land, either in tillage or manure, the produce will be sure to prove deficient and defective, after the plant has suffered from an undue quantity of moisture at any period of its growth.

Two modes of planting are advocated; the best is to plough the land into ridges two feet apart, then, distributing the manure along the furrows, place the sets upon the manure, and split the ridges with a double mould-board plough. In this manner the seed will be covered with light earth, and after the lapse of a week or ten days the land may be harrowed quite level. The most expeditious and the cheapest mode will be to lay out the manure when the land has been worked fine and to a level surface; spread the manure, and put the sets into every alternate furrow, raking in a portion of the dung upon them, and by plough-

ing twelve-inch furrows the rows will be brought two feet apart. After a little time the land should be rolled, or harrowed, if required.

The after-culture may be well executed by an implement much in use, and convertible for the purpose of either horse-hoe, or double mould plough, for earthing or hilling the rows.

Early sorts are now the only varieties which can be expected to give a crop, because, in late varieties, the blight attacks the haulm before the bulbs are matured. Three good sorts are the *York Regents*, the *Fortyfollds*, and the *Early Lemon*. These kinds mature early, crop well, and are of good quality; they produce very little haulm, and do not suffer from blight so much as the later varieties, which have very luxuriant haulm. I have found that a much better wheat crop can be obtained after these early sorts than after the late varieties, which exhaust the land very much by the growth of strong haulm, without the advantage of a matured crop of tubers.

The quantity of seed required for an acre of land will vary according to distance of the rows; when the sets are placed seven or eight inches apart, in rows at two feet intervals, about twenty bushels of small Potatoes will plant an acre; but in case cut sets are used, it will require twenty-five or twenty-six bushels per acre. A difference of opinion exists as to the advantages of using Potatoes for seed either whole or cut, but I am inclined to think it depends much upon the period of planting; when planted very early, whole tubers should be used, being less likely to rot and decay in case wet and bad weather follow soon after they are set. Whole seed will generally give the best crop if full-sized tubers are used; but they cost more than cut sets. The most economical and advantageous seed for field culture are the small Potatoes, just under the marketable size,—a less quantity of them being required to plant an acre, and not being so ready of sale for other uses. The cheapest and most expeditious mode of separating the small from the marketable Potatoes, is to pass them over a strong wire riddle, which may be made to any size required.

Since this root has been subject to the attack of blight, objections have been raised against the use of manure in its cultivation; but I have found that the quantity and quality of the manure used for Potatoes should be regulated by circumstances. When the crop is required to be taken up and disposed of at the earliest period, and in an unripe state, the strongest manures, and those rich in ammonia, such as stable manure, night soil, or Peruvian guano, may be used with great advantage, because the disease seldom attacks the plant at the early period; therefore, when a large quantity of strong manure has been used, it will stimulate the growth of the tubers, and produce them of a marketable size, at the earliest period, upon all dry and warm soils.

In case the crop is intended to remain in the land until it is perfectly ripe and matured, and also when the tubers are required for storing, to be used in the winter and spring months, the question of manuring assumes a different form altogether, the plant having to withstand the attack of disease, which, of late years, has usually appeared about the time that the haulm is in full growth; it has, consequently, been found advisable not to use any strong stimulating manure which would produce a luxuriant growth of the haulm and thereby render the plant more susceptible of blight and disease. I therefore recommend that artificial manures should be used for the main crop, as being likely to produce tubers of the soundest and best quality for general purposes. Two quarters of bone-dust, four bushels of peat charcoal, and one-and-a-half cwt. of sulphate of magnesia, mixed with ten or fifteen bushels of ordinary turf or peat ashes, will be found an ample dressing for an acre of land. I have applied this kind of manure in the following manner:—After the sets have been placed in the furrow, a man follows with a seedlip full of the manure, and strews into the furrow, by hand, the requisite quantity, the plough following, buries the seed and manure in close contact.

These manures act very beneficially, the charcoal, being decidedly disinfectant, operates against disease, and the bone-dust, with sulphate of magnesia, furnish the plant with those substances essential in producing tubers of the best quality.

JOSEPH BLUNDELL.

EGGS AT POULTRY SHOWS.

THE Royal Agricultural Society, marching with the spirit of the times, has wisely resolved on an Exhibition of Poultry at their Country Meeting of 1853. Prizes on a liberal scale are offered "for improving the Breeds of Farm Poultry;" and, in furtherance of this praiseworthy object, I would suggest that there should be an exhibition of *eggs*, as well as of fowls. Unfortunately, all eggs are regarded alike in the market; and one weighing two ounces realises as much money as another that weighs three or four ounces. Ought this to be? In taking the merits of fowls into consideration, for *general purposes*, not only the *number*, but the *size* of their eggs, should be duly ascertained. Wise cooks weigh the eggs they use, rather than entrust the success of their operations to the uncertain and empirical system of numbers. It could be easily arranged to exhibit the fowls and their egg-produce at the same time, and the size or weight of the egg should form an element of success in gaining the prize. Very rigid conditions, even to the extent of affidavit in doubtful cases, might be enforced to secure honesty or fair play; in other words, to guarantee that the eggs displayed should be the *bona fide* produce of the fowls exhibited. No person can fairly deny that the size and number of the Spanish fowl's eggs are an important set off against the weight of the birds themselves, as compared with the Shanghai (or Cochin-China) breed; and, as the Spanish fowls differ greatly in the size of their eggs, the prize should always be given, other qualities being equal, to the hen which produced the largest eggs. For example: Captain Hornby's birds are stated to produce eggs weighing nearly or quite four ounces; whereas, the writer is cognizant of many Spanish hens that do not lay eggs weighing three ounces. Again, as regards Ducks—the Aylesbury breed may, perhaps, be excelled by others in size, but their eggs are very heavy, rich, and numerous. The writer speaks on this point, however, only from his own experience; his Aylesbury Ducks frequently producing eggs weighing four ounces each. Ought not these qualities to be estimated by a Society awarding prizes for the improvement of *Farm Poultry*? It may be said, that this scheme leaves the matter of frequency of production untouched; and that, in many cases, the defect in the weight of *individual* eggs is more than compensated by the greater *number*; and, consequently, greater weight ultimately obtained. It may do this; but, leaving out the fact, that exhibitions cannot wholly reach such a matter, it may be fairly expected that similar species would be nearly equal in this respect, under the same conditions of warmth, food, and situation. And, of course, Spanish should contend against Spanish, only; and so on with others. A small box, carefully divided, having a glass top, would serve as a fit medium for the exhibition of the eggs; and I feel assured that such an addition would add to the attraction and usefulness of our "Poultry Shows." J. H., Mickleover.

THE DISCONTENTED SPIRIT.

By the Authoress of "*My Flowers*."

HAVE any of my readers, or have any one of their friends and neighbours, the misfortune, the *affliction* of possessing a discontented spirit? Let that unhappy one read with attention the following narrative. It has been sent to me by a most kind heart, whose hope is, that it may be the means, by the blessing of God, of doing some good to those who are "seeking rest and finding none," in change of place and circumstance, seeing nothing of the Hand that holds the universe in its grasp, and orders all things; yes, *all things* that happen to the children of men; but blindly supposing that their own poor feeble fingers can weave the web of worldly good, independently of that one blessing, without which, "the devices of the crafty" are disappointed, "so that their hands cannot perform their enterprise."

"William Green was a native of South Wales, the son of a small farmer, by whom he was apprenticed to a bookbinder in a neighbouring market-town. My first acquaintance with him commenced with a reply which he made to an advertisement, inserted by me, for a journeyman in that department of my business. Finding, upon enquiry, that he was steady,

honest, industrious, and a tolerable workman, I took him into my employ at the rate of £1 per week. Here he soon evinced, what I afterwards found, from information and experience, was his ruling characteristic, *a discontented spirit*, always yearning for better times and better countries. His wages were certainly ample to keep him in comfort and respectability; but, nevertheless, he thought otherwise; a thought enhanced, perhaps, by the prospect of his marriage to a respectable young woman to whom he had long plighted his troth; and who became his wife about a twelvemonth after he entered my service. Often did he complain to me of the hardness of the times, the dearness of provisions, and the difficulty of providing for his wife, with what he considered such small means. I was wont to point out to him the difference between his position and thousands of others who were living on half his income; and took the opportunity of impressing upon him the thought of another world, and reminding him of his inconsistency in thinking with so much dissatisfaction of this, instead of having his heart filled with gratitude for the many mercies he enjoyed. To my great discomfort, I could never ascertain that he habitually went to a place of worship; and that, although a strict moral man, I had reason to fear he entertained but few serious thoughts. His discontent increased. England, he said, had seen her best days; there was no chance for the working man; rates were so high; provisions so dear; in fact, his heart was yearning for another land.

"His wife bore him three children, fine chubby little things they were; the two younger ones were twins. Here was another subject of discontent; how could he possibly support them on £1 per week? things were bad enough when he was a bachelor; but now, how could he exist? His wife was a quiet, tidy person of few words; and when any visitors called upon her they could elicit little from her. She looked, however, always clean and respectable, and seemed to keep his home in comfort. His prejudice against his native country increased almost to a mania; he was constantly poring over books on emigration, especially on South Australia. This was long before the discovery of gold in these auriferous regions. His whole thoughts were occupied on the subject, to the considerable detriment of his business; the position of each town was as clearly defined in his mind as on a map; and the peculiarities of the climate, and its adaptation to the growth of particular trees and grain, was fully understood by him; and I subsequently ascertained that his notion of emigrating was to cultivate the Pine, and keep a dairy.

"Finding that he had fully made up his mind on the subject, I did not oppose it, and told him that I would do all I could to assist him. The excellent Vicar of the parish in which he resided took up the matter warmly, and though before unknown to him, wrote many letters on his behalf to the Emigration Committee, and, eventually, all difficulties were removed, so that to his great joy and satisfaction the day for his sailing was fixed. Alas! that men would seek a Heavenly country with half the ardour and perseverance with which William Green sought an earthly one; then, indeed, should we have less repining and fretfulness, and more thanksgivings for the blessings we enjoy in our native land!"

The conclusion of this eventful narrative I must defer to my next paper, and request my readers, in the mean time, to ponder the last remark; that if we sought an Heavenly country with half the earnestness with which poor Green sought an earthly one, things would go better with us than they do. There is no *peace* to a discontented spirit—it is a perpetual punishment. It is like the craving of a sick stomach after some fancied delicacy, which makes it turn away from the wholesome nourishment that would give it strength; and when the longing is gratified, loathing or increased disorder of the stomach most frequently takes place. A discontented heart is a diseased one. We are hewing out for ourselves "broken cisterns that can hold no water." We are craving after some fancied good which, when we have with labour and difficulty obtained, we find not to be the thing it seemed, or that we fancied it; and then, instead of mourning over our rebelliousness of heart, and want of faith, we throw all the blame upon other things, or people, and persuade ourselves that if *this* had only been *that*, or *that* had only been *the other*, we should have found

things just as we expected, and all would have been well.

I dare say, indeed I am sure, that there are many men feeling and acting like William Green; thinking times are very bad; wages very low; masters very hard in their dealings. A young man starts early in life upon £1 per week; this is very comfortable for himself, but he resolves to marry, and then he finds it impossible to maintain a wife upon it. What must it be when two or three children are added to the little household? The times; the wages; the masters, are blamed; but where lies the real fault? Then, again, people say—"But it is very hard that I can't marry, and have a home of my own." It *may seem* hard; but we little know, when our way is hedged in, what misfortunes are hedged out. We only know the troubles we make for ourselves—we do not see those from which a gracious Father protects us, because they are, perhaps, warded off by circumstances that are very disagreeable or distressing to us. A man thinks it *very hard* that he cannot marry the woman he likes, so he takes her in spite of everything; and *then* he thinks it very hard that he cannot support her, and grumbles at the hardness of his employer for not raising his wages. Debt, privation, most likely domestic unhappiness, and worldly troubles, follow very fast; but what does it all spring from? From an imprudent act. If we cannot lawfully, prudently, or religiously undertake a step, depend upon it, the angel of the Lord is standing in the way before us; and if we force our way, as Balaam did, by headstrong and passionate determination, we shall be crushed against the wall as he was, and our plans and undertakings will as certainly break down and throw us to the ground.

I have enlarged on this subject, because I think it one of some importance, particularly in this present day; and I request those of my readers who may feel sympathy with William Green, in his wishes and expectations, to wait quietly until I can lay before them the conclusion of the whole matter; considering, in the meantime, whether *they* have not, thoughtlessly, or passionately, taken some unadvised step in life. *All* are liable to err; but instead of blundering on in the same dark road, if we *waited upon God*, and *sought help and direction from Him*, we might recover from much of our own evil doing, and, at all events, be preserved for the future from the fatal mischiefs and follies into which we have hitherto run.

PARTIAL PARALYSIS IN A HEN.

A DORKING hen, nearly two years of age, up to yesterday has been in excellent health, is a regular layer, and has of late surpassed herself as regards the *size* of her eggs. She has been well and regularly fed, but by no means (as I believe) overfed. Yesterday morning she was discovered by the fowl-keeper, lying upon the stage under the perch with her neck twisted as if it had been wrung. The feathers of the neck were all turned in a manner to give the same impression, and the head was twisted round, so that the bird looked along her own back at her tail. She could not stand, and appeared to suffer much. I naturally expected an accident of some sort, if not intentional foul play on the part of some person or beast; but subsequent observation has removed the suspicion. The hen was put into a basket and taken into the kitchen; castor oil was administered copiously internally, and the neck (which I could feel to be unbroken) was lubricated with plenty of sweet oil. She remained very ill all day, with much fever, and little or no appetite. This morning she appeared better; the external application of oil was repeated, and by mid-day she was walking about, apparently free from pain, but with her head and neck still twisted to such an extent as to render it extremely difficult for her to pick up food; in fact, it was turned about three parts round, instead of entirely round upon her back. It appears to give her no pain if the head be held by the hand in its proper position (though it makes her a little uneasy), but the moment the hand is withdrawn it returns to its unnatural position. More than once I believed that things were coming right of themselves, but always at this juncture a strange kind of fit has come on. The poor creature stands still and begins turning her head

round and round in the direction of the twist (*i.e.*, from right to left), until she becomes giddy, staggers about, and at length falls over on her back, her head becoming rigidly fixed in the position I have described; and that as the bird lies upon its back with its feet in the air, the point of its bill is on the ground. Her eyes at this crisis are fixed, and she appears to suffer if not pain, certainly terror. After a time the fit leaves, and she walks about unconcerned, except for the inconvenience.

AMATEUR.

[The symptoms described are those of an affection of the brain and nervous system. Most probably, one side of the brain only is affected, causing paralysis of the muscles of the opposite side of the neck, when the contraction of those muscles that remain unaffected produces the twisting of the part.

These cases of diseases of the brain, which produce apoplexy, paralysis, and fits, are, in severe attacks, but little under our control; they are not unfrequent in laying hens which are highly fed.

Strong aperient medicines, which lessen the amount of the circulating fluids, and the plainest food, and quietude, are all that can be done.

Rubbing with oil is useless, as the disease is in the head, not in the part apparently affected.

If one of my own fowls were so attacked, I should bleed her immediately; but in unpracticed hands this remedy might be as fatal as the disease. — W. B. TEGETMEIER, *Tottenham.*]

FIELD CARROT CULTURE.

THE preparation of land for Carrots is a portion of farm management requiring the greatest care and nicety in its execution. This crop has recently come into prominent notice, not only in consequence of its great value for feeding purposes, but also on account of its successful cultivation on many soils which, from the too frequent repetition of Turnips, has failed to produce a crop.

The best soil for Carrots is a deep, rich sand, yet good crops are often raised on very poor sands, and they may be also successfully cultivated on all dry soils usually appropriated to the growth of Turnips, except thin chalk, and shallow, gravelly land. Clay soils are not generally considered well adapted for the growth of this root, chiefly because it is difficult to get them into tilth; yet I have obtained, upon some of the clay portions of my land, very good Carrots; for although the roots grew more out of ground, and were ill-shaped, they proved a heavy and valuable produce.

* Like all other root crops, the place in the rotation to which it is assigned is a question of great importance. I have obtained excellent crops, grown after Turnips fed off by sheep, too late for sowing Barley; and when a few acres are required to be drawn from the land, this is a good course for the crop; but the kindest and best course, is, first, Turnips fed off, sown to Barley; after which autumn tillage for Carrots; however, the only rotation by which Carrots can ever be extensively cultivated, without deranging the usual four-course system, is to substitute the Carrot for the Turnip crop, *viz.*, Wheat, Carrots, Barley or Oats, Clover.

I would further observe, that this crop may, if required, be grown successively on the same land with greater advantage than any other root crop.

The most advantageous state of the land for this root is to obtain the finest possible tilth, extended to the greatest depth practicable, and entirely free from the roots of grass and weeds. The actual amount of tillage, &c., required, will, of course, depend, upon the state of the land, and the preceding crop; for instance, when the Carrot crop is intended to follow that of the Turnip fed off, the amount of tillage required will be comparatively trifling; the land having been previously well tilled for Turnips, one ploughing and subsoiling will generally prove sufficient, with immediate harrowing, rolling, &c., which will give a fine surface, and retain sufficient moisture to cause the seed to vegetate.

But in both the other courses of crops alluded to, namely, Carrots after Barley or Wheat, autumn tillage is all-important; and the land being generally clean where the Barley crop has succeeded the Turnips, I recommend, that as soon as

possible after harvest the land should be ploughed as deep as the furrow can be turned, the subsoil plough following, stirring the land to a good depth; then harrowed and rolled until quite fine, and, if the season permit, ploughed and subsoiled as before, crossways. In that state the land should remain during the winter, until the month of March, when it should be harrowed fine, and ploughed into ridges of such size as the nature of the soil may require, but the more level the land lies the better. As soon as the weeds make their appearance they should be destroyed by the use of the scarifier and harrows; the land should not be ploughed again on any account, but the scarifier and harrows may be employed instead, a day or two before the time appointed for sowing.

When the crop follows that of Wheat, it often happens that the land is partially infested with couch grass and root weeds, which should be destroyed by the scarifier, and burnt, previously to the commencement of the course of tillage before named.

In all soils congenial to the growth of Carrots, where a liberal course of cultivation has been pursued for some years previously, it may be said, that the Carrot does not require any manure, a large and heavy produce being almost certain; yet I have found it answer well to drill with the seed about 2 cwt. of superphosphate per acre, with a few ashes, for the purpose of forwarding the young plant earlier to the hoe, and in advance of the weeds. I cannot advise the use of farm-yard manure for this crop; however, in case of land being out of cultivation, or not well suited for its culture, I would apply some artificial manure; I think the best for this purpose is Peruvian Guano, applied broadcast, previous to the last ploughing; as I have found when harrowed in on the surface it encourages the growth of weeds, and causes the Carrot plant to throw out an unusual number of small surface-roots, which is opposed to its most profitable growth.

The seed should be quite new, and the quantity required will be about seven-pounds per acre, which should be hand-rubbed, and entirely free from burr; it may then be drilled with an ordinary Turnip drill, with the greatest regularity. The best time for sowing I have found to be the last week in April, or the first in May, at which time, in ordinary seasons, the seed will vegetate immediately, which is essential in advancing the plant out of the way of the weeds; whereas, in sowing earlier, as formerly, about the 25th of March, the weeds grow and gain the ascendancy over the young plant to such an extent as to endanger the crop in wet seasons, and at all times to greatly increase the cost of hoeing; a further advantage of late sowing will be found in the opportunity afforded for completing the tillage, and the destruction of weeds.

Upon shallow soils, the land should be stitched into ridges two feet apart (drilling a single row on each ridge), for the purpose of giving a greater depth of soil for the plants to root in; and, in extreme cases, where land is unusually subject to weeds, it will allow of the free use of the horse-hoe. But upon all Carrot soils well tilled, the best mode I have found, is to drill upon the flat, at fourteen or sixteen inches apart; for, although the horse-hoe cannot be used so readily at this distance (inasmuch, as weeds should be hoed out early, and before the plant is large enough to bear the horse-hoe), yet the hand-hoe will be more effectual at the narrow distance, because the plants meet across the drills quickly, and permanently check the weeds during the remainder of the season; whereas, in the wide distance, although the horse-hoe may be continually employed, yet there will be sure to spring up a constant succession of weeds, in consequence of the Carrot greens not being able to meet across the space until a late period in the season.

JOSEPH BLUNDELL.

HOWDEN POULTRY SHOW.

Who has not heard and read of Howden Fair, which supplies London with many of the best of carriage horses, and the whole country with horses of all descriptions? To the fair succeeds an Agricultural Show, and a show of Poultry has now been added. These exhibitions, for the present year, were held on the 18th of April, and one more

is added to the list of Shows for which Yorkshire was already famous. About 140 pens of poultry were brought together, and the observation at once occurred that there was little among them that could be called even inferior.

The prize-list will show who were the successful competitors in the various classes, and we have little to add to the tale which it tells. That little, however, will be in praise both of the arrangements and of the exhibition itself, which bids fair to become an exceedingly good one, if we may judge from the specimens exhibited in some of the classes, or from the interest apparently taken in the entire show.

The *Spanish* were the best class in the exhibition, and we very much doubt whether, as a class, a better one was ever exhibited, even at Birmingham itself. The individual specimens were excellent, the pens well matched, and the birds, for the most part, shown in excellent condition.

The *Shanghaes* also were good, and in each of the other classes, with one or two exceptions only, some first-rate birds were exhibited.

The fineness of the day, as must necessarily be the case with all out-door shows, contributed much to the gratification which a very numerous company, especially of ladies, experienced; and we shall look to that at Howden as a very thriving Society. It is but justice to the Hon. Sec., Mr. Carter, to state that the public are greatly indebted to him for the arrangements made, and for the use also of the show-field.

The following is the list of prizes awarded by the judges, Mr. Travers, of York, and Mr. Bond, of Leeds. We omit the classes in which no prize was awarded.

Class 1.—SPANISH (Cock and two Hens).

First prize, J. H. Smith, Esq., Skelton Grange, York. Second prize, J. Hartley, Esq., M.D., Howden.

Class 2.—COCHIN-CHINA (Cock and two Hens).

First prize, J. H. Smith, Esq., Skelton Grange, York. Second prize, George Jackson, Esq., York.

Class 3.—DORKINGS (Cock and two Hens).

First prize, Mr. Blanshard, Bubwith. Second prize, Sir Clifford Constable, Burton Constable.

Class 4.—MALAYS (Cock and two Hens).

First prize, Mr. George Jackson, York. Second prize, Mrs. Pettinger, Spaldington.

Class 4a.—GOLDEN PHEASANT (Cock and two Hens).

First prize, Mr. Kendall, Goole. Second prize, Mr. Mark Green, Howden.

Class 6.—POLAND. (Cock and two Hens).

First prize, Mr. George Boothby, Louth. Second prize, Mr. Thomas Saxelby, Howden.

Class 7.—SILVER PHEASANT or CHITTYPRAT (Cock and two Hens).

First prize, Mr. George Clark, Howden. Second prize, Mr. Charles Smith, Caistor, Lincolnshire.

Class 8.—ANY BREED OR CROSS (Cock and two Hens).

First prize, Mr. Charles Hutchinson, Howden. Second prize, Mr. F. Ferguson, Walkington.

Class 9.—BANTAMS (Cock and two Hens).

First prize, Mr. C. Smith, Caistor, Lincolnshire. Second prize, Sir Clifford Constable, Burton Constable.

Class 10.—EXTRA PRIZES (Best Cock).

First prize, J. H. Smith, Esq., Skelton Grange, York.

Class 12.—DUCKS (Drake and two Ducks).

First prize, Mr. Blanshard, Bubwith.

Class 14.—GUINEA FOWL (The Pair).

First prize, Mrs. J. Thompson, Spaldington.

Class 15.—RABBITS (For the best Pair).

First prize, Mr. J. Foster, Haigh, Selby. Second prize, Mr. George Sherburn, Howden.

SPANGLED versus PHEASANTED.

THAT my remarks as to the true colour of a spangle should, at the present time of poultry-fancying, meet with some opposition, I am not at all surprised; for as the varieties known as Pheasant, Moonies, &c., have lately been huddled together by the parvenu amateurs and dealer clique, and having been thus amalgamated under a new name for about five or six years, it is not to be wondered at that when the true Spangle of the old aristocratic fanciers asserts its claim, it should be scoffed at as a pretender that no one knows or cares about. I take *white* to be the colour of a spangle—certainly not black. Dr. Johnson, who is the Englishman's authority for the meaning of his words, gives the following examples of the application of the word spangle:—

“As hoary frost with spangles doth attire
The mossy branches of an oak half dead.”

Spenser's Faerie Queen.

“Thus in a starry night fond children cry
For the rich spangles that adorn the sky.”

Waller.

“That now the dew with spangles deck'd the ground,
A sweeter spot of earth was never found.”

Dryden.

And I think, if an artist had to paint the spangles of frost, stars, or dew, white would be the colour principally used, though it might be edged with some of the prismatic colours.

As to whether my “unique” opinion on this point, as Dr. Horner calls it, has now become apocryphal or not, is of little importance; but I do assure him it was once canonical, and I still consider it as such. I shall, therefore, adhere to the traditions of the Fathers in this until he can find some more conclusive reasoning. That the uninitiated frequently confuse the various markings of fancy poultry is not to be wondered at; but when a fancier understands all the varieties the confusion ceases.

I like everything should have a right name, and be called by it. The true old Spangled Polands, and the old feather-footed Spangled Bantams, were adorned with a multitude of small white spots, which constituted the spangling whence the name was derived; but as these got scarce, the term became ambiguous, and was applied by the would-be amateurs to various markings, of the real names of which they might be ignorant. Thus, doubtless, arose the confusion complained of in the Rev. E. S. Dixon's work; but, as he appears to know nothing of the true white spangle, is, consequently, not an authority in this matter. He objects to the term Pheasanted, because simple people have misunderstood its meaning; and thinks it improper to use the name of other birds to illustrate the marking of fowls; but even he makes use of the terms Pheasant Malay, Cuckoo-fowl, and Lark-crested.

The term Spangled has but comparatively lately been applied to the Pheasant and Mooney markings; and, if each are not properly distinguished, we shall have, under the prismatic system, the anomaly of White Spangled Golden fowls, and Black Spangled Golden, or Silver fowls, and so forth, whether Polands, Dutch Every-day layers, or Bantams; and, as the fancy advances, the shape of the spots will also require to be designated: for instance, such a list of names as Lozenge-shaped Black Spangled Golden Dutch Every-day Layers, which may be simply expressed by Golden Pheasanted Dutch.

In answer to “W's” remark respecting the golden-pheasanted feathers sent, I beg to say they were perfect, and if he will take the trouble to obtain a few feathers from the crop-part of a cock pheasant's neck, and compare them, he will, I think, at once be convinced of the resemblance. What he alludes to when he says the spots should be rounder, is a variety of the pheasant's marking sometimes known by the name of moony. The other remarks of his I have answered by another paper, as he did not seem exactly to understand my meaning, which is, simply, that what are now generally called “Spangled Polands” are not really and truly such, but used to be known as Pheasanted Hamburgs, a variety quite distinct from what are now improperly, I think, called Hamburgs.

It is, also, worthy of remark, that though the recent poultry shows are greatly improving some of our breeds of poultry, still others seem much to have degenerated from what they

were some years back. I allude to the Malays and Polands. The Dorkings also, though they have greatly increased in weight, and still maintain their character as table fowls, have lost caste as fancy fowls, by departing from their original characteristics of white plumage and rose-combs, which some amateurs as "Cochin," even consider improper. It is my belief that the single combs are attributable to the crosses by which their size has been increased, as Spanish, Malay, or the large Cuckoo fowl, and I have generally noticed, that the rose-combed Dorkings are shorter, and more compact, than those with single combs.—B. P. BRENT, *Bessel's Green, near Sevenoaks.*

[Here this controversy had better terminate. We do not coincide, nor does any Poultry Society coincide with Mr. Brent's definition of a Spangle. The generally recognised definition, in which we entirely agree, is shown in the following illustrated notes.—ED. C. G.]

THE SPANGLED FEATHER.



MUCH learned ink has been shed upon what *ought* to be intended by the adjective when we speak of "a spangled feather." Some maintain that it should only intend a dark feather, with a *white* spot at the tip; but such a narrow restriction is not justified by the use of the word by some of the best masters of our language. If such restriction were correct, then Milton was wrong, when, in his "Paradise Lost," he speaks of faces

"Spangled with eyes, more numerous than those of Argus."

Even if the legitimate use of the word were properly so restricted to mean only a light-coloured figure, yet its established employment, with a more extended signification, is quite sufficient to justify us in defining a spangled feather to be one that is broadly tipped with a colour differing from the ground colour of the feather. Thus we have before us ochre-coloured feathers spangled with white, ochre-coloured spangled with black, black spangled with white, and white spangled with black (as represented in our drawing).

We think that the spangle which approaches to a circular form is the most correct, for when of the crescent or horse-shoe shape it appears to be passing towards the laced character. When the spangle is of the crescent form, the plumage has a gayer and lighter aspect (we are speaking of the dark spangled); but when the spangle is circular, or oval, the plumage is richer to the eye. The ground colour of the feather should be unsplashed.

The fowls in which spangled varieties occur are, first, the Golden and Silver-spangled Hamburgh, than which few more beautiful birds decorate our poultry exhibitions. The marking is here seen to most advantage, for when we pass on to the Polish family we frequently find a tendency to

blend the spangling with the lacing; and though beautiful specimens of both may be here attainable, the spangle is not so uniform a character of the plumage as with the Hamburghs.

Bantams, too, are frequently spangled; but as in this class lacing stands pre-eminent, birds with spangled plumage stand lower on the list, and are too often irregularly spotted.

THE LACING OF FEATHERS.

As one of your readers, I beg to thank you for the portraiture of the Poland's Feather. I conclude that you give the plate as a representation of the feather sent to you, and not as an example of what a perfectly laced feather *ought to be*. As a specimen, it is very faulty, on account of the great width of the marking, or, rather, almost spangle, at its tip; indeed, if you place the finger about two-thirds of an inch from the end of the feather, you have represented a by no means indifferent spangle. A good laced feather ought to have the same width of border throughout. The Sebright Bantam affords the most perfect example of true lacing. As you properly observe, "the more regular the lacing is in width," &c., the better; the great irregularity in the representation of the feather given places it in the common class of laced and spangled; so at least I should certainly class it. The combination of lacing and spangling always produces in the fowls a dark, confused, and indistinct appearance; and such feathers in no place look so well as on paper, where the indistinctness is not visible.—H., *Hull.*

[It is quite true that the illustration we gave of a laced feather is not quite perfect, for the lacing at the tip is rather too broad. It is, however, a true portrait, and its lacing quite equal to that usually found on the feathers of Polands. The lacing is rarely of uniform width on any variety but the Bantam.—ED. C. G.]

FROST-BITTEN FOWL.

A SPANISH Cockerel, when first taken ill, presented no symptom but discolouration of the comb and wattles, and that uncomfortable appearance always observable in a sickly fowl. We thought the cold (February) had affected him; took him into the house, gave a little spirits and water (which we have sometimes found very efficacious), and afterwards a simple purgative. For a short time he seemed better, and was allowed to rejoin his companions, and we hoped the change of weather would have restored him to health, but within a few days he looked decidedly worse, and to-day (early in March) we have brought him again into the house, to try the effect of warmth and calomel, thinking his complaint might be similar to the one described in your last number. I find his comb is much inflamed, and his wattles in a dreadful state, much swollen, as if they were bags hanging from his throat, and I think in a state of mortification.

[This letter we have to apologise for having mislaid. As far as can be ascertained from the description, I should imagine this to be a case of frost-bitten comb, which has run on to mortification. There can be no great danger, &c., of the general health, as the appetite continues good. Should this be the case, the parts affected will, of necessity (being dead), drop off, and the bird, in all probability, recover, minus the ornamental appendages. Calomel, or any other strong medicine, will do harm; the strength should be supported by a generous diet, and I would recommend a little chopped raw meat to be given. Correspondents requesting advice cannot be too particular in their description of the symptoms; it is impossible to arrive at a satisfactory conclusion from a short account. In this case, a more certain opinion could have been formed if the colour of the affected comb had been mentioned, and the nature of the diet, situation, and degree of warmth or coldness of the roosting place described.—W. B. TEGETMEIER, *Tottenham.*]

IS THE ROUP CONTAGIOUS?

CONTRARY to the usually received opinion, I confidently reply—No. Roup is simply purulent inflammation of the mucous membrane which lines the eyelids, nose, and throat of fowls; and its cause is cold, especially when combined with dampness or wet.

A nearly allied state of disease, where the windpipe or air-passages are especially implicated, may be induced by irritating effluvia; as I have witnessed the production of such in three days, in Polands and Bantams, which were kept secluded, at breeding time, in a warm but ill-ventilated stable, where the ammoniacal odour, &c., was strong. So, in like manner, may the foul and vitiated air of the poultry-house, arising from want of cleanliness, and of ventilation, exert a similar influence on fowls, inducing difficult respiration, and some degree of heat and swelling about the throat and head, but not usually accompanied with the purulent discharge; such symptoms being manifestly the local effect of irritating effluvia on the delicate membrane of the windpipe. Roup, as already said, is purulent catarrh; its seat, the membrane lining the eyelids, nose, mouth, and throat; its cause, cold and wet.

It is of the greatest importance to the lovers of poultry, that this fact, of the non-contagious nature of roup, should be fixed in their minds; it may preserve the life of many a fowl. I think that in all the modern books on poultry that I have read, the contagious nature of this disease is implied, admitted, or enforced. Hence the most stringent advice is ever given, "at once to remove the diseased fowl from the rest, or the infection will be communicated to all." The real danger of such a dogma and proceeding lies in its very supposed safety; as persons may remain satisfied after they had, as they conceived, by following such advice, prevented its further spread. Whereas, coldness, dampness, and the unclean state of the poultry-house, were the true causes of the disease in the bird first affected, and would, in all likelihood, induce it in the rest, unless guarded against and avoided. I repeat, then, that there is danger in the notion that roup is contagious, and that its spread is prevented by the removal of the sick fowl.

It is difficult to root out old prejudices or opinions. I have heard, and also have seen it affirmed in books, that the roup soon spreads from the infected fowl—that, one by one, the rest will become infected. The simple fact is, however, *that the same cause which produced it in the first bird, continues to induce it in others*—it is not by contagion; and hence it will ever be found, as I have myself oftentimes verified, that, when the diseased fowl is removed to a dry, healthy, and warmed apartment, where other fowls are being kept (from various causes of illness, difficult moulting, &c.), in artificial warmth, *the disease is, in no case, communicated to such*. Of course, if it were infectious, it would spread amongst poultry in one locality as in another.

The treatment of roup, as usually given, is in the main correct enough. Sundry directions are prescribed for a dose of this, and an ablution of that—things that do no harm; it just being suggested, as it were, at the end, to remove the fowl to a sheltered situation (more to avoid the infection of the rest, I believe, than for cure). In reality, the grand remedy is concentrated in this removal; a dry, comfortable, and not only warm, but an artificially-warmed apartment, *is the essential and truly efficient treatment*. Do this, and little else would oft be required; omit it, and all else is unavailable, as treatment.

I would still, however, make use of assistants, not only for the fowl's comfort, but as being really serviceable: hence, keeping the eyes, nostrils, &c., clean by the frequent use of simple warm water and a sponge, and besmearing a little hog's lard, or spermaceti ointment, around the edges of the eyelids, to prevent their being sealed up by the hardening discharge; the lowering of the catarrhal fever by an occasional aperient, especially of powdered jalap—say as much as would lie upon a shilling, and mixed with a little butter into a bolus. Attend, then, to these simple directions—removal of the affected fowl to a healthy, dry, and warm apartment; ablution with warm water, and the use of simple ointment to the eyelids; an aperient of jalap now and then (every second or third night); giving, also, soft nutritious

food; and in most, if not in every case, the fowl will shortly recover.

Lastly, forget not the critical situation in which the other poultry are placed. Their house must be made warm, dry, clean, and, in the day-time, well ventilated; nor should they be allowed to go abroad in wet, cold weather, without sufficient shelter to which they can resort.—H., *Hull*.

WHITE COMB IN SHANGHAES.

MR. TEGETMEIER'S advice for the cure of the disease referred to at page 272 has been taken, by giving Plummer's pills, with evident advantage. Previous to the pills being given the bird was reduced to a skeleton, and could not have lived much longer; the feathers had become saturated with the peculiar greasy appearance spoken of, and the smell from it offensive. Although it is not yet recovered, it has very much improved, and put on a considerable amount of flesh. I am not quite sure whether it should not have a change of medicine. Will Mr. Tegetmeier accept my thanks for his advice. I should not write now, but have waited till the result had been more decided, but for observing the remarks in *THE COTTAGE GARDENER*, page 452.

Respecting the brimstone and saltpetre, that seems a dangerous and doubtful remedy; it was tried on two full-grown birds last year twice, and it turned their combs and gills nearly black for a day or two, and effected a partial cure. The disease in question, I recollect, so affected the gills of a cock that they seemed dried and shrivelled up as if they were leather.

[It is exceedingly gratifying to hear that a suggestion which I threw out on general principles merely, should have proved so successful. I think, as regards change of medicine in this case of White Comb, I should be inclined to try the effect of some preparation of potash, say three grains of chlorate of potash every day, made into a pill with moist barley meal, watching the effect carefully, and, if it appear desirable, conjoining it with an occasional Plummer's pill.]

Richardson's Work on Poultry is remarkably deficient in the chapter on diseases. Sulphur and nitre, the same as brimstone and saltpetre, are recommended in "the proportions of one quarter each, mixed with fresh butter." It is not stated whether a quarter of a grain, ounce, or pound, is meant, and as nitre is a violent poison in any but very small doses, I am not surprised at the evil result described by our correspondent.—W. B. TEGETMEIER, *Tottenham*.]

"TURNER'S FLORIST," AND "THE SCOTTISH FLORIST."

THESE are two excellent monthly Magazines, and the only objection that we have to either is, that the epithet "Scottish" conveys an erroneous impression that its contents are only fitted for the climate of Scotland. So far from this being the case, its gardening essays are equally applicable to each division of the British Islands. As a proof, it not yet being quite too late for *Asparagus* planting, we will extract the following from its pages, communicated by Mr. Cuthill, of Camberwell:—

"The first *Asparagus* that made its appearance this winter in Covent Garden was consigned to Mr. Lewis Solomon early in November, and came from the south of France. The stalks were about from twelve to fourteen inches long, a middle size in girth, but nearly all white, with only about three inches of eatable matter at the tip.

"The market-gardeners round London are now producing *Asparagus* much better than they used to do, since the absurdity of only having three inches of eatable matter at the tops has been so much exposed. They are also reducing the enormous covering of earth, of from twelve to fifteen inches, to six or eight inches; also by allowing the *Asparagus* to rise about four inches above the earth, this will give something like six inches of eatable matter. This is just the plan of the private grower, and I believe that *Asparagus* grown by the gentleman's gardener is as fine again in flavour, as well as containing much more eatable

matter. The enormous bulk of mould only tends to weaken the plant, and is quite against the nature of it. A bundle of 100 heads of the so-called best *Asparagus* looks well to the eye, but when the cook gets hold of it, three-fourths of it goes at once for Mr. Pig, then only do we find the expense of a dish. It is a very hard case, that although it is a native of Britain, through the expensive way of growing it, tradesmen and the lower classes do not even know the taste of it, no doubt owing much to the expensive ground it is grown in, as well as from a misunderstanding of the physiological construction of the plant. The market-gardener's plan of growing is as follows; but in the first place I would mention that—

"There is but one kind of *Asparagus*. A Mr. Grayson, an extensive grower on the south bank of the Thames, introduced what he called his 'Giant' *Asparagus*; but it proved to be only the usual kind. He made it a 'Giant' by putting mould over a few of the very largest heads he could find on his extensive beds, which covered about thirty acres. The heads were cut and shown in market as a new sort. They were about eighteen inches or more in length, and a hundred heads weighed 42 lb.; but, unfortunately, like other *Asparagus*, only three or four inches were fit for eating. There can be no doubt, however, that the present plan of saving seed from the strongest plants has much improved *Asparagus*.

"As it is my intention to discountenance the production of long white drum-stick *Asparagus* as much as I can, I beg leave to advocate the following plan, by which in time every row will form its own bed. I propose that each row be planted three feet distant from the other, and that each plant stand one foot apart in the row. This will give ample room for cleaning the crop, and for drawing up earth over the crowns, so as to form a ridge three or four inches deep, to be lowered again for the purpose of enriching the soil in the autumn and winter. By this method I consider that *Asparagus* might be cut at least ten days earlier than it is by the plan now practised of burying the roots deep in a bed of earth, where sun and air cannot act upon them; and as for flavour, it has long been proved that although gentlemen's gardeners do not grow *Asparagus* so large as the market-gardener, of the two it is by far the finest in flavour, with at least three times more eatable matter in each head, though only two-thirds the length. I have had *Asparagus* sent to me from Brussels, all blanched together a beautiful creamy white; but, when cooked, I could not discover the taste of *Asparagus* in it. It was watery and insipid, as highly-blanched *Asparagus* must always be, having only the watery flavour of the roots. I have proved this years ago, by keeping it in frames shut up, and the glass covered over with mats to exclude light.

"I imagine that I have said enough to explode the old-fashioned and expensive plan of growing this much-esteemed British vegetable. Some imagine that unless the roots are covered during winter, the frost will kill them; if roots are moved during winter, the wet will rot the injured fibres, and no gardener who understands anything of vegetable physiology would think of lifting the roots for planting until February or March, unless for forcing, and the latter are put into heat at once; but *Asparagus* is perfectly hardy. The plan of putting large quantities of manure on it during winter, is nevertheless good; for the winter rains wash the strength of the manure down amongst the roots. I should give the ground a good salting annually in February, and when cutting is discontinued in June, I would *soak* with manure water, or town sewage water better still, or even spread on dry artificial manure, for the heavy rains will soon wash the strength of it among the roots, and just at the time when the latter are making fresh crowns for next year's crop. This is no doubt the proper time to manure *Asparagus*. If the above method of cultivation is adopted, I doubt not that its benefits will soon be discovered not only in the shape of improved 'grass;' but also by the consumer. I believe that it is impossible for the grower to alter his mode of culture without the assistance of the consumer, and I am sure that by the plan I have just been advocating, the drain on the roots will not be half so much as it is now, owing to the fact of the latter having to form such a quantity of underground sticks, ultimately to be thrown away. Wherever it is practicable, *Asparagus* ground should slope

to the south or south-east, and the rows should always run south and north. Where the land is light, ploughs might be used in throwing up the ridge on each side of the row, and then it could be forked over. The chief labour and expense will be in cutting and sending it to market, which will form employment for the people in the neighbourhood. In order to prove what the exclusion of air has to do with not only the flavour, but the hard or woody texture of the stem (under protracted growth), I had several heads of *Asparagus* just out of the ground covered over with long Cucumber-glasses, and all air excluded. When the stems reached the top they were cut and boiled; but they were so hard that not even the top could be used, proving at once that without plenty of air, the stem gets tough and useless."

As a specimen of the useful information derivable from "Turner's Florist," we will extract the following notes on *New Roses*, from the pen of Mr. C. G. Wilkinson, Western Rose Nursery, Ealing:—

"The new Bourbon *Roses* are comparatively few; some of them are, however, first-rate additions to that family. *Appoline* is one of the prettiest, clear pink, a seedling from *Pierre de St Cyr*, on which it is a most decided improvement, being more compact, better-formed, one of the freest late bloomers, and of robust habit; and as a bouquet flower it has the approbation of the most *distingué marchand* in London, *Aurora du Guide* is violet-tinted crimson, and a dark flower. *Duchesse de Thuringe* is, for a small cupped Rose, a perfect model; its colour is light flesh, its habit dwarf, and it is quite a gem in the autumn. *Furie* is a very free-blooming bright crimson; but hardly distinct enough from some of a similar colour in this family. *Louise Odier* is a finely-formed strong-growing variety, a bright rose-colour, and an excellent addition to the pillar varieties. In *Menoux* we have one of the most brilliant recent additions; it is truly described as "glowing carmine," of dwarf habit, and strikingly beautiful. *Prince Albert* (Paul) is a decided improvement in habit and increased size on *Comice de Seine et Marne*: in colour they are very similar, the Prince being somewhat more brilliant. *Scipion* is a crimson-tinted scarlet, very vivid pleasing colour. *Forace* is, however, in my estimation, the gem of the dark novelties of this section; it is of the most beautiful shape, of large size, and a rich deep velvety crimson, and may be described as a perfect flower; it has also a depth and substance of petal that induces me to believe that it will prove the first fine dark cupped show-flower (as a single) that has yet been introduced among the perpetuals.

"The most recent additions to the Noisettes are, *Caroline Marnisse*, a counterpart of *Félicité Perpétue*, now really a perpetual; *Narcisse*, a delicate pale yellow, not large, but beautifully formed; and *Octavie*, a novel bright red, of medium size, and an acquisition to this group.

"To the Chinas no very desirable additions have been made lately that I am aware of; but to the Tea-scented we have a few which may be said to be valuable. *Madame Willermorze* is a large fine variety, very distinct and beautiful, being white with a nankeen or pale buff centre; its form is of a deep cup, the petals stout, and for one of this family it appears quite hardy. *Souvenir d'un Ami* is one of the largest, much of the same shape, size, and quality; its colour is a clear pale flesh, and may be termed of robust habit. *Madame de Sombreuil* is a fine large blush with a yellowish tint, of the right form; but of its constitution I will not this season venture an opinion.

"Having brought the list of perpetuals to a close, I proceed with such of the more recently introduced summer varieties as may yet be considered desirable to cultivate, although the perpetuals are fast superseding them.

"A curious addition has been made to the Provence section in *Narcisse de Salvandy* (Van Houtte), being a bright crimson with a white margin; it is not very double, nor can its peculiar marking be always relied on, but as a picturesque Rose in a group it is unique; the *new striped Provence*, white with pink stripes, has, however, the character of constancy, which makes it very desirable.

"To that charming tribe the Mosses, we have recently added *Nuits de Young*, a rich velvety deep crimson, not very large or double, but the colour makes it attractive; and *Jenny Lind*, crimson, the buds of which are so thoroughly

mossed as to obtain for it the flattering title of the Queen of the Mosses.

"Added to the Hybrid Bourbons we have a fine flower in *Paul Ricaut*, vivid crimson, of good shape; one of the best adapted for exhibiting singly.

"In Hybrid Chinas the most recent introductions are the four French Generals, *Allard*, *Changarnier*, *Lamoricière*, and *Jacqueminot*: the first is reddish rose-colour, of good shape, and a good pillar Rose; the second, a fine, large, deep crimson; the third, a bright pink, well formed; and the last, a dark red, and a model in shape; the first and third frequently giving autumnal blooms, particularly if some of the longest shoots are reduced to half their length during the summer."

SHANGHAES AS A COTTAGE FOWL.

No sooner said than done. I told you that I must have a pair of fowls, and that I thought they should be "Cochin-Chinas." I have now to inform you that I have got a pair, and beautiful looking chaps they are. They are but small yet, but I must try if I cannot make them larger.* I was informed that their father weighed 14lb., and their mother 10lb., and that their owner had them from a friend that imported them; whether this is true, I know not, but this I know, that I am very well satisfied with them, and with what I saw of the stock they came from.

I promised to tell you how I got them, and you shall now have it as fast as I can pen it down (and I hope it will encourage you never to be daunted, though the matter be ever so deep). I wrote to a gentleman, whom I believed had the best stock of Cochin-Chinas in England, telling him that I was a poor man, and yet had a great desire to be in possession of a pair of these fine birds, and hoped he would be so kind as to let me have a pair of late hatched chickens as reasonable as he could; and he kindly wrote me an answer back to say that he had a few late hatched ones, but that he did not generally sell them under £5 per pair, but, as I styled myself a poor man, he would let me have a pair for £4. Now, you will know by my other letter that I thought one guinea a large price for a pair, so from that you will guess how I was taken by surprise.

When I received his letter my wife laughed at me, and told me she should think that would cure me of thinking about Cochin-Chinas, particularly as my landlord would be coming to see me in a short time; but I was not to be daunted at this. When you see me daunted you will see the Wrekin fall. I straightway wrote to another gentleman, telling him the same tale, and he kindly sent me word that he would let me have a pair for one guinea, but he should pick them from his second-class birds. Now this is what I call honesty; and should I ever want to deal with a gentleman again, to save breeding in-and-in, this is the man that I shall apply to. I do know a little of this gentleman's birds, for the five that I mentioned in my last letter were bred from his stock; but between the time that I wrote to this gentleman and received his answer, I heard of a few to be parted with not far from home, and as the gentleman knew me to be a poor man, he kindly let me have a pair for less than one guinea, and now all that remained for me to know was whether they were well bred—so, of course I must go and see them, and take my judgment along with me; and here you shall have a look at it, as I got it from THE COTTAGE GARDENER, and I hope you will tell me how far I am off being right.

Moderate length of legs, rather too short than long; the legs to be yellow, or yellowish, well covered to the toes with feathers; head rather small, and narrow; comb single, and rather small; tail very short, particularly in the hen; wings small, the extremities of which should be almost hidden before under the breast feathers, and behind by the saddle feathers; body deep from back to breast, wide on the rump, and very broad behind, which part, as well the thighs, ought to be covered with abundance of soft, downy feathers, and although a good horse is never of a bad colour, still I must have them buff, as I believe they carry the sway, and I should rather have a few

dark-pencilled feathers on the neck than not, as I believe that adds to their beauty.

Now, with all this in my head, off I went to pick out my first pair of poultry, with quite as much caution, and rather more, than when I went to pick out my wife; and now with this judgment, and the chickens before my eyes, I don't think that any man in England would have sent me a pair that would have given me more satisfaction. I have also met with a friend that has promised to give me a sitting of Spanish eggs as soon as I have got a hen that will sit upon them. So you see what may be done by pressing forward, and the main object that I have in view, is to encourage poor people to press forward. No man knows what he can do till he tries, as I have shown in the sketch of the early part of my life. But I must wish you good-by for the present; but if I am alive and well, you shall soon hear from me again; and if I am only able to awaken one poor cottager out of his sleep, and set him agoing, it will give me great pleasure indeed.—A POOR MAN'S WELL-WISHER.

(To be continued.)

TO CORRESPONDENTS.

POLYANTHUS (G. J. G.).—The pips you have sent are all good, but especially 5 and 6.

ANTS (C. H. Windle).—These do no harm to plants, but, on the contrary, are enemies of the plant-lice.

LEG SPASMS IN SHANGHAES (P. W.).—Keep the chickens cool, dry, and not on stimulating food. Treat them as recommended to "G. F. D.," at page 13.

GOLDEN POLISH PULLET (Charlotte Elizabeth).—There were some good ones sold by auction the other day. Poultry sales are good places to pick one up at; or from some of the parties who advertise in our columns.

VINE PRUNING (A. B.).—"Roberts, on the Culture of the Vine," will suit you.

RUSTIC GATES AND SEATS.—We shall be obliged by any reader sending us a drawing of any of these which they know and admire.

MANAGEMENT OF SILKWORMS.—J. H. A. wishes to know of some good work on this subject. We have six in Italian, and wish that some of our readers would undertake to translate one of them, for insertion in our columns.

GOLDEN POLAND FOWLS EGGS (W. W. Sims).—We cannot tell where you can get any.

WEIGHT OF DORKINGS (Margaret).—It is only by careful selection of stock, and breeding from the heaviest birds gleaned from different strains, that you can attain to such weights as cocks of 10 lbs. and hens of 8 lbs. These are attainable weights, for in January last, Captain Hornby had Dorkings half-a-pound beyond those weights. Between 7 and 8 lbs. for the cock, and 6 lbs. for the hen, are fair average weights of birds that come into the market.

ROSES (G. S. W.).—There are certain other Roses quite as good in their way as *Ne Plus Ultra*, which show the green centres nine times out of ten, and nothing will ever cause them to be otherwise in our climate. All those who pretend to cure such things are just so many quacks. Burn or throw away at once, and for ever, all Roses that do not suit your soil, for there are many hundreds to choose from that will suit it. There is not a single "hardy and pretty creeper," for covering the handle of a basket, "that would not grow too bushy." We, ourselves, would give a good price for such a creeper, to get rid of the half-hardy *Maurandias*, *Lophospermums*, and all such. None of the *Clematises*, or *Honeysuckles*, or *Roses*, or climbers, or creepers, or twiners, that are quite hardy, come up to our ideas for a basket-handle. In fact, like yourself, we suspect we are too particular.

PYRACANTHA SEEDS (Zoe).—Gather the haws now, and put them in sand, in a box or jar, and bury them in the garden, and next October take them out, and sow them in a bed, in a well-sheltered place, and the seedlings will come up this time next year.

VERBENAS (Ibid.).—Unfortunately, there are no five distinct colours to be had among all the Verbenas, after you have *Defiance*, and *White Perfection*; for a purple, *Emma*, is still the best; *Beauty Supreme* is as good a pink or rose as any; *Imperatrice Josephine* for blush; *Emperor of China* for crimson; *Valentine de Saveuse* is a lilac-blue; *Heloise* is a bluish-purple; *Psyche*, a rosy-purple; *Bry*, a fine white; and *St. Margaret* is a crimson, with a lighter centre. These are all very good established kinds.

HORTICULTURAL AND POMOLOGICAL ASSOCIATION (Ibid.).—You cannot get anything from this Association without being a member. They are not a trading body, but their charges go to pay their own incidental expenses—that is all. They will collect from the different seedsmen and nurserymen what you require, and send them in one parcel to you. They are agents, but nothing more.

PLANTS FALSELY NAMED (S. Y.).—If you have copied the names correctly, all of them belong to a new "Natural Order," called *nonentity*, and to a section of that order called *ascality*. You deserve to be duped to the very bottom of your purse, if you allow "any nurseryman" to send in plants without you ordered them. There are no such names as those you have sent.

IPOMEA HORSFALLIE (Ibid.).—It must not "be cut in freely" at any time. It will not bear to be even cut to the ripened wood nine

* This was written last autumn.—ED. C. G.

times out of ten. Where the shoots are soft, plump, and purple, and each with a prominent bud, is the place to prune to.

TAXIDERM.—*Mr. F. Grant* obliges us with the following:—"Why does your correspondent 'T. M. W.' not buy the small edition of 'Waterton's Wanderings' by Charles Waterton, Esq., of Walton Hall? In it Mr. Waterton (among the first, if not the first of bird-stuffers,) explains every particular of his system. When a lad of the Durham University, I took some lessons of H. Proctor in bird-stuffing. He is the Curator of the University Museum, and a first-rate hand. He lent me a small book, which I have forgotten all about, except that it was called 'The Taxidermist,' but a line addressed Mr. H. Proctor, University Museum, Durham, would meet with immediate attention. Excuse me for saying that your late articles upon the subject were sad mistakes, if they were not intended as mere curiosities." (We were quite aware of Dr. Latham's practice in Taxidermy being behind modern practice, and only published the MS. as a relique of so distinguished a naturalist.—*Ed. C. G.*) Messrs. Jessop, of Cheltenham, recommend "Taxidermy" by Mrs. Lee, published by Messrs. Longman in 1843.

MUSHROOMS (J. J.).—Your failure may arise from two or three causes, any one of which is sufficient to account for it. In the first place, if your dung had lain out during the soddening rains of last autumn, it would be almost hopeless to look for Mushrooms; secondly, if the bed was put together without the dung being so far tempered in its heating properties as to ensure its internal warmth not to have exceeded 80°; and thirdly, an evil sometimes arises out of one directly contrary to the first, i. e. by the bed being too dry, but this is of rare occurrence, nevertheless, we recommend you to consider if one or other of these evils has not caused your failure; should it be the last, we have known a good sound watering, with the addition of some more spawn, produce a fair crop; and in the second instance, where the spawn has been destroyed by undue heat, we have known a similar result by applying more spawn when the heat has subsided, but this is seldom good, for the over-heating of the dung unfits it for producing a crop; and we know of no remedy for the first of these evils, unless it be that watchful care which prevents, rather than cures, such a state of things; but you need not despair. Many eminent gardeners are deceived in their Mushroom beds, which are, perhaps, more capricious than anything else they are to cultivate.

BARREN APRICOT BLOOMS (W. N.).—The Apricot flower was so shrivelled that we could judge nothing certain from its appearance. The incipient germ is, in all probability, defective. This is not a very uncommon case in some fruits; but the cause is not well ascertained. Whenever we have a case of the kind—and we have had several during the last thirty years—we invariably replant or destroy, according to the age and value of the kind. We have thus reclaimed Pears and Cherries, but have not always been successful. This practice is based on the assumption of injuries or checks received through a bad or wet subsoil. Indeed, it is probable that any severe check, at the period the blossom for the future year is in active organisation, may have a tendency to produce imperfection in the organs. That period will be July or August; and extreme drought, or stagnated wet, may alike produce the same result. Whether the roots rot or are dried up, "the supplies are cut off."

VINERY TO COMMENCE FORCING IN DECEMBER (E. S. A.).—For the roof we should use an angle of 45°, or half a right angle. We know of no better glass for your purpose than good "sheet." As to heating, we are not aware of anything superior to hot water. A house of this kind, about ten or twelve feet wide, and as many high, would be tolerably well heated by a five-inch flow and return-pipe placed about a foot from the front, especially if night covers could be used. We would rather not have the Pines in an early vinery; these things are both better and more economically done in separate places. An early vinery, properly managed, must be profitable.

PEACH-HOUSE (A. M.).—From the period of setting, to the commencement of the "stoning" period, we should let the thermometer range from 55° (no sun) to 70° (with sun and air) by day, and through the night from 45° to 55°. During the stoning process, we would allow some 10° more by day, but only a degree or two more by night. Whether guano or manure-water will be beneficial at that or any other time depends on two considerations—whether the trees are short of energy; or whether they will bear root moisture.

A FEW BEST GREENHOUSE PLANTS (E. G.).—Lists are of little use, unless the object and the means available are known. Greenhouse bushes—*Acrophyllum verticillatum*, *Boronia serrulata*, *Aphelexis macrantha*, *Chorozema Henchmanni*, *C. varia*, *Crowea saligna*, *Pimelea spectabilis*, *P. Hendersonii*, *Eriostemon scabrum*, and *E. intermedium*. *Azaleas*—*Optima*, *Lateritia*, *Gledstanesii*, *Variegata*, *Ignescens*, and *Perryana*. *Ericas*—*Cerinthoides*, *ampullacea*, *Cavendishii*, *depressa*, *Ewerana*, and *Massonii*. *Epacris*—*grandiflora*, *miniata*, *impressa*, *hyacinthiflora*, *hyacinthiflora alba*, and *campanulata*. *Glorinias*—*Cartonii*, *grandis*, *maxima alba*, *Passinghami*, *Handlyana*, and *maxima rubra*. *Achimenes*—*picta*, *longiflora major*, and *alba*, *Tugwelliana*, *patens*, *venusta grandiflora*, and *pedunculata*.

TROPEOLUM LEAVES DROPPING AND TURNING YELLOW (T. B.).—This you have grown in peat. Are you sure that it has been watered enough? or that you have not grown it too freely in the dark days of winter?—that will cause it to fade now when flowers ought to be expected, because there was not enough of light to consolidate the stems. We prefer some loam and cowdung with peat, instead of having it all alone; the plants are apt to grow weak and fast, and the above result is sometimes the consequence. It is only just to say, that sometimes they will go off most unaccountably, baffling the gardener as effectually as some patients do a medical man.

CYCLAMEN AND HEPATICAS (Cymro).—These do not bloom, but leaf finely. All right for next year. Give them plenty of light to mature the buds; defend them from frost and wet in winter, but do not let them get dry, and next spring you will have a fine show, all the better for the fine foliage now. See previous articles. Violets were lately alluded to; they will come in the way for a short sketch in a week or two. You should mention what kind; but you will see all about it in a few days.

HALF-HARDY GREENHOUSE CLIMBERS (Ibid.).—*Cobea scandens*, *Dolichos lignosus*, *Eccecrumcarpus scaber*, *Lophospermum erubescens*,

scandens, *Hendersonii*, and *spectabilis*; *Maurandya Barclayana*, *Hendersonii*, and *alba*; and last, but far from least, *Tropaeolum pentaphyllum*. These will all cover a large space during summer.

CHAMBERS'S JOURNAL (G. J.).—Thanks; we will refer to the article.

TANKS FOR SEWERAGE (Brevis).—Those described in our first volume, page 7, answer quite well. Others, on a similar plan, are about to be erected.

WAX MOTH (H. F.).—If you refer to page 193 of our third volume you will find a drawing and description of this moth and its larva (*Tinea mellonella*). If you have not the volume, order the number (No. 67).

RENNET (Ibid.).—We never heard of "liquid rennet." The best mode of preserving the stomach of the calf is to dry salt it thoroughly. The fresh flowers of the common *Lady's Bed-Straw* are a vegetable rennet, and a much more elegant one than that afforded by the calf. If the flowers were dried and well preserved would they retain their curdling power? It is worth the trial.

VINEGAR PLANT (M. S.).—Write on the subject to Mrs. Somers Smith, Rectory, Little Bentley, near Colchester.

HYBRID FOWL.—*Salvia* says:—"One of my neighbours, Robert Raw, gamekeeper to Viscount Downe, of Danby Lodge, Yorkshire, has at present a very fine bird between a cock Pheasant and a Dorking hen. The hybrid (a male) takes after the hen in colour, and after the Pheasant in shape, though much larger. He was shown last year at the Castleton and Danby Poultry Show, and, of course, attracted much attention. He continues very wild, and appears as though he will never be made tame. The colour is brown, and white-spangled."

LIST OF SHOWS (Bearded Poland).—We will give them occasionally. Remember our space has to meet many rural tastes.

NAMES OF PLANTS (W. T. B.).—1. *Sparaxis pendula*. 2. *Sparaxis*. 3. *S. stellaris*. (*E. F. H.*)—*Luzula campestris*. Field Wood Rush, or Small hairy Wood Grass.

FOWLS TOO CROWDED (J. H.).—"I have eleven hens and one cock, of the common sort, occupying a yard 12 ft. long, and 9 ft. wide, to which is attached a roosting-house, about 7 ft. long, 8 ft. high, and 2½ ft. wide, facing the east. For some months some of them have been the most deplorable-looking objects I ever saw; having lost nearly all their feathers. Upon watching them closely, I have, on several occasions, seen them pick the feathers out of each other, and eat them. They lost their tails in the moult, and have not owned any since. No sooner did a feather appear in one of their tails, than it was picked at by the others, until the protuberance from which the tail grows was completely covered with blood. I feed my fowls morning and night with barley and oats mixed, and in the middle of the day with middlings and potatoes, mashed together, with green food occasionally."

[A fowl, when allowed its liberty, obtains a large supply of food from grubs, worms, and insects; now your birds have no such opportunity of gratifying their taste for animal food; and, hence, probably, one cause of the morbid appetite you speak of. We would advise your giving a quarter-of-a-pound of cooked meat daily, among the twelve, and also giving them a portion of wheat. The meat to be gradually diminished on recovery; but fowls, we should add, can not be kept in health when thus closely confined, without animal food of some kind; greatly as we object to the indiscriminate use that is too often made of it. Your yard, also, is, doubtless, tainted with its too numerous inhabitants; for a cock with two or three hens would be the most that ought to be kept within such narrow limits; and even then, the closest attention would be always necessary. We can hold out, however, but little hope of your birds recovery in their present locality, and their best chance would be immediate removal to a good country run.—*W.*]

FIVE-TOED SHANGHAES (Verax).—If you refer to "The Poultry Book," p. 1, you will see sufficient reasons for the opinion, that the Shanghai and Cochinchina Fowls are one and the same. None having five toes ought to be bred from; because, if even a mere accidental sport, it might be inherited by their chickens. But, the probability is, that the birds having five toes have Dorking blood in their veins. We know a strain in Hampshire that is Dorkingized.

TAILS OF SHANGHAES (Rusticus, A. B.).—When it is said in "The Poultry Book," that there should be no feathers in the Shanghai's tail more curved than the scimitar, and, "like the weapon itself, with a radius not exceeding one-fourth of a circle," you are quite right in pointing out that the definition is not mathematically accurate. We are not surprised that you, "as a Cambridge Wrangler," object to its faultiness; and we are quite sure that the authors will adopt, in any future edition, your definition, as follows: "The Scimitar feather has a curvature so small, that if laid upon the circumference of a circle corresponding to it, the feather would just cover one-fourth part of that circumference." We do not know where you can get *White Shanghai* eggs, except of the parties who have advertised in our columns.

GREASE STAINS ON MARBLE (A Lady Subscriber).—These, arising from putty, or any other source, may be removed by rubbing them for some time, by means of a flannel, with a paste of equal parts of quicklime and pearlsh. Yeast, whether fresh or putrid, is a good manure.

KIDD'S JOURNAL OF NATURE.—In the advertisement of this Journal, in our paper last week, the concluding paragraph in the quotation from the *Liverpool Mercury* should have been as follows:—"This Work boasts a gratuitous correspondence, peculiarly rich in useful information, introuvable elsewhere; highly suggestive of sources of innocent and grateful excitement, and adorned with all the charms which originality of conception and a natural style of expression can bestow upon it."—*Abridged from the Liverpool Mercury, March 8, 1853.*

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WEEKLY CALENDAR.

M	W		WEATHER NEAR LONDON IN 1852.				Sun	Sun	Moon	Moon's	Clock	Day of
			Barometer.	Thermo.	Wind.	Rain in In.						
D	D	MAY 12—18, 1853.					Rises.	Sets.	R. & S.	Age.	af. Sun.	Year.
12	Th	Pearl-bordered Likeness.	29.724—29.639	67—49	S.W.	25	15 a. 4	38 a. 7	morn.	4	3 52	132
13	F	Azure Blue; meadows.	29.714—29.680	59—51	S.W.	02	13	39	0 1	5	3 53	133
14	S	Oxford Term ends.	29.953—29.586	62—38	W.	02	11	41	0 45	6	3 54	134
15	SUN	WHIT SUNDAY.	30.077—29.935	65—39	S.W.	—	10	42	1 20	7	3 54	135
16	M	WHIT MONDAY.	29.825—29.811	74—47	W.	—	8	44	1 48	8	3 53	136
17	Tu	WHIT TUESDAY.	29.851—29.709	66—47	S.W.	33	7	45	2 11	9	3 52	137
18	W	EMBER WEEK.	29.662—29.569	72—45	E.	11	6	47	2 32	10	3 50	138

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 64°.5 and 42° respectively. The greatest heat, 86°, occurred on the 15th in 1833; and the lowest cold, 25°, on the 15th in 1850. During the period 112 days were fine, and on 70 rain fell.

BRITISH WILD FLOWERS.
(Continued from page 53.)

CORYDALIS LUTEA: Yellow Fumitory.



Description.—It is a perennial. *Root* of numerous fibres, striking deep. *Stem* erect, a foot high, and, like the *foot-stalks*, triangular, brittle, juicy, reddish and shining. *Leaves* on long stalks, thrice three-leafleted, of a bright, rather milky-green; leaflets wedge-shaped, with rounded lobes. *Flowers* in a solitary, terminal, upright cluster, scentless, lemon-coloured, with deep-yellow lips. *Bractes* very small, egg or awl-shaped, saw-toothed, acute, much shorter than the *flower-stalks*. *Calyx-leaves* egg, or spear-head shaped, with blunt points, membranous, soon deciduous. *Spur* of the *corolla* rounded, incurved, very much shorter than the stalk, as is likewise the rather compressed and quadrangular *pod*. *Seeds* small, round, somewhat flattened, and dark coloured.

Time of flowering.—April to end of summer.

Places where found.—It is very rare. First found in England by Mr. Howard, growing on old walls near Castleton, in Derbyshire. At Holmhead, near Giggleswick, and at Fountains Abbey, in Yorkshire. At Marple, near Stockport.

At Nether-Witton, in Northumberland. On Broadway Hills, Gloucestershire. In St. Mary's Churchyard, and in Mellas Lane, Warwick. At Brislington, and other places near Bristol. In all these localities it was growing either upon or near old walls.

History.—In 1596, being then considered an exotic, it was introduced from Barbary, and cultivated by Gerarde. The flowers are sometimes white. The older botanists, from Gerarde down to Linnæus, called it *Fumaria*, and the last-named authority confounded it with *F. capnoides*; but this is an annual, and he soon corrected the error into which he had fallen. Ray, in his *Historia Plantarum*, gives several recipes for its employment in medicine, but they are not fitted for publication in a work like the present. Decandolle at first called it *Corydalis capnoides*, but this gave way to the more legitimate name of *lutea*. Miller justly observes that the leaves continuing green all the year, and the flowers in succession through the summer, render it deserving of a place in every garden. It is peculiarly fitted for rock-work, old walls and ruins, where the seeds often lodge of themselves, being thrown to a considerable distance by the elastic contraction of the sides of the pods, when they burst spontaneously.

CORYDALIS CLAVICULATA: White climbing Fumitory.

Description.—It is an annual. *Root* slender. *Stems* one or more, three-cornered, delicate and tender, branched, leafy, from one to three or four feet high, purplish at the base, climbing upon other plants, by means of branched *tendrils* terminating their *leaf-stalks*. *Tendrils* generally forked, with two small leaves near their end. *Leaves* leafleted; *leaflets* two to five, elliptical, entire, milky-green; paler beneath, ending in a flexible point. *Clusters* opposite to each leaf, stalked, rather dense, of several elegant white *flowers*, about five, rarely more than two perfect, variegated with blue or grey, each on a short partial stalk, scarcely so long as its accompanying small *bracte*. *Calyx* toothed. *Spur* rounded, very short. *Pod* spear-head-like, acute, undulated at each side, containing three or four *seeds*.

Time of flowering.—May to July.

Places where found.—In bushy, shady places; especially on gravelly, or stony, sandy soil.

History.—It is first mentioned as an English plant, by Gerarde, in 1596, who says he found it "growing in a corn-field between a small village called Charlton and Greenwich." It is the *Fumaria* and *Capnos alba latifolia*, and the *F. claviculata* of the older botanists. Decandolle first included it in his genus *Corydalis*. The whole genus is included in the *Diadelphia Hexandria*, class and order of Linnæus. (Smith. Withering. Miller.)

FREQUENTLY, a simple principle reasoned upon affords a clearer insight into a gardening operation than whole pages of practical directions. We recollect once receiving a good supply of a pretty plant, with the added information, that it was found "growing on a sand-bank," and the wish implied that we would try what we could do with it. Part of the plant was, therefore, placed on a sandy knoll, another part on a gravelly slope, and another part among decaying rubbish of ricks, and every suitable attention, as we thought, bestowed upon

upon them, but all to no purpose. When about to abandon them in despair, in an evening ramble, we beheld, for the first time, the identical plant growing vigorously in rather sandy soil, it is true, but mixed with rich alluvial matter, and at such a short distance from a stream of water, that its roots could seldom know what it was to be thirsty, while even the leaves would run the risk of a thorough drenching during every flood. This solved the whole difficulty about the plant in question.

Now, supposing a stranger, after tasting our nice, crisp *Celery* for the first time, and then being taken out to see its well banked-up state in the garden, would he not be inclined to form and carry into practice the opinion, that this banking-up was *indispensable* in its cultivation, without ever imagining that *growing* the *Celery*, and then *preparing* it to be fit to eat, were two processes altogether different? This is just the simple cause why so many people are yearly disappointed with their *Celery*,—find all their early plants, after all their trouble, only fit for soups, and must be content to wait until the end of autumn before they get nice, crisp, unbolted heads for salad, and for cheese. In fact, they wait, we do not say patiently, until the lessening influence of heat and light, and the decrease of evaporation from the foliage, as a consequence, prevent the stimuli being applied to the plants, which, in summer and autumn, would have led them at once to throw up their piping flower-stalks; alike the result of the resolution, that even then they would continue their race, and the effort to be revenged for the unnatural banking-up to which they had been subjected.

Hence it is that we safely bank-up as the cold days and nights come, so far as making the plants show their flower-stalks is concerned, and protect them from frost, and secure blanching by the same operation.

But, can such a system be successfully followed in July, August, and September? We say generally—No. And having grown very early *Celery* in our time, and moderately early now, with scarcely such a thing as one run-head in our early rows, we do attach more importance, as respects an early supply, to the simple difference between growing and preparing, than to any times or modes of sowing or planting, having sown in December, January, February, and beginning of March, with a similar result; only that the first sowing involved very much more labour, space, and attention, to prevent unnecessary cheeks before planting-out time came.

We wish those amateurs, who are the least sceptical, to examine for themselves a nice young plant of the rough-looking, harsh-tasting, if not poisonous, *Smallage*, the progenitor of all our best garden *Celeries*, as it grows, if not in the bottom, by the side of a marshy ditch, with its roots as moist as may be, and within easy distance of the sea breeze. The first thing he notices, is that this *Smallage* imbibes water pretty freely, and taking this important natural hint, he resolves that the offspring, *Celery*, shall not want for the water-pot, and have a small handful of salt in it too, now and then, just to prevent its being home-sick. And in this he is perfectly right, for *Celery*, during the whole growing season, is never injured by wet, if it does not stagnate about the roots, and if the water is slightly saline, now and then, it will be in its favour.

But now, however much he may admire his plants to look at, he knows they are uneatable, and, therefore, he wishes, by blanching and excluding light, to change the flavour, so that it will be wholesome and sweet as a nut. He has achieved a similar result by covering up Sea-kale, but he cannot adopt a similar process with *Celery*,

because that has not such reservoir roots as Sea-kale; *Celery* not being, like the Kale, a perennial; and the great thing is to blanch and use the young leaf-stalks before the flower-shoot appears. If we covered the whole plant from light we should get insipidity, if not decay, instead of sweetness. The great thing, therefore, is, especially for early work, to keep the growing and blanching process going on simultaneously. We, therefore, expand the top of the plant to air and light; we keep the lower part of the plant rather dry, if possible, and shut it out from light, it matters not how, by tying it up as a Lettuce, causing it to grow through a pipe, wrapping it round with a cloth, or with straw-bands, or, as is generally done, surrounding it with a mound of earth. Any one of these plans will do, provided we take the teaching of nature, and *never let the roots become dry*, so long as there is a strong sun to evaporate moisture.

Now let us visit the wild plant on the side of the ditch again. You know it is a biennial; you know that extra stimulus and extra cheeks are used every day to give biennials the character of annuals; you know that water is so dear to the *Celery* that the want of it would be a great cheek; and, notwithstanding all this, when you set about blanching this wild plant, the first thing you do is to open a great trench to dry up the natural ditch, during the scorching of an August or September sun!

Now, absurd though it may seem, this is the exact counterpart of acting out the advice—"Keep putting a little earth to the *Celery*, a few inches at a time," so far as good *Celery* is to be had in August, and the beginning of September, and the finer and stronger the plants, the greater the danger. We will notice how it acts. We will suppose that you water the *Celery* before you begin to earth up; so far, well; by degrees, the mound rises from twelve to eighteen inches in height, several showers have fallen in the meantime, but not a drop of that can find its way to the roots, though the fine foliage has been refreshed; but a fortnight of warm, unclouded weather comes,—think what a quantity of moisture these huge leaves have thrown off in that time by evaporation. Whence came it? Try a row for table use. Much of it bolted again? Examine the roots. Oh, they are so dry! Just so; the evaporation, the dryness, and the bolting, are cause and consequence, provided no great cheeks had previously been given.

As many will now be pricking out and sowing their *Celery*, we prefer giving these ideas now, that our friends may have time to con them over. We believe them to be true in theory; we know them to be beneficial in practice. Many amateurs, who have received the hint, completely take the laurels from us with early *Celery*. With this slight matter unnoticed, the culture of *Celery* has been treated in a first-rate manner in these pages.

But how blanch with earth, without these continuous earthings? Simply thus. The plants before and after planting are cleaned from suckers; as they grow strong they are tied up separately, loosely at first, and if that

should get too tight, the tie is loosened and fastened again. A few top-surfacings of earth of half-an-inch each is given, especially after waterings, the tying does something to blanch the interior, and encourages the young heart leaves to rise, while the whole of the rest of the plant is in the best position for growing. The blanching is completed by mounding up with earth or ashes three weeks before the plants are wanted, or from that to four weeks.

One word to exhibition growers. Even with these precautions, do not strive to have much of your Celery *very* large, if you mean to keep it any time after it is earthed, unless you can furnish it with an umbrella against every shower. If not, the water will trickle down to the heart of the plant, and as it will not be able to get out, it will there cause decay, giving you something even more disagreeable than bolting up its flower-stalk. Besides, for all purposes, except looking at, middle-sized Celery is best. F.

So certain do we feel that a great majority of *Calceolaria* growers are just now ruining them with an excess of kindness, or, in other words, treating them as if much more tender than they really are, that we give this prominence to a note that has been obligingly written to Mr. Fish, by Mr. Fraser, gardener to Marquis Camden, at Wilderness Park.

"I do not think I can add anything to what is stated at page 69, and elsewhere; however, here is the process, in a few words. I select a piece of ground, suitable for the number of handlights I intend to fill; and on that I place three or four inches of clinkers, or of any other rough material for drainage, over which I place about two inches of peat and loam, mixed together, two parts of the former to one of the latter, and about half-an-inch of silver sand on the top, to insert the cuttings in. I generally put in the cuttings about the beginning of October, and the hand-lights are kept close until the cuttings are struck; and air is then freely given on all favourable occasions. Mats and fern are used in winter for protection from frost. By the beginning of April, sooner or later, according to the state of the weather, I transplant the struck plants into a temporary pit, where the necessary protection can be given them, and thus they make nice stubby plants for turning into the beds with good balls, by the middle or end of May.

"*Penstemons* I treat in the same way. If I had thought this mode worth recording in THE COTTAGE GARDENER you might have had it years ago, for I always wintered these plants in the same way when living at Sulby Hall."

We feel much obliged by Mr. Fraser's prompt kindness, but we expected nothing else from a constant subscriber to THE COTTAGE GARDENER. It is a pleasure to compare notes with such men. Three things may be noted by beginners. *First.* Do not insert *Calceolaria* cuttings *too early* in autumn. *Secondly.* After providing that wet does not stagnate near the roots, let the plants have a cool, moist atmosphere in winter. *Thirdly.* The moving the plants from the hand-light in spring is merely for giving each room to grow.

ALTHOUGH we quite agree with our correspondent (*Ulmus*) that more taste might very easily be adopted in the arrangement of St. James's and the other Parks in

London, yet we quite disagree from his opinion that "the wishes of the people only ought to be considered." *Ulmus*, judging from his handwriting, is not a member of the royal family, and, therefore, is perhaps not aware that St. James's Park is the property of the Sovereign; that only certain persons have the privilege of driving through it, and that if the Sovereign chose to exercise her legitimate power she might close it up altogether, and prevent even foot-passengers passing through it. It is not probable that her Majesty will exhibit such a freak of despotism, but if she did, we do not think her people would inflict upon her the penalty which Sir Robert Walpole told Caroline, Queen of George II., would follow the visitation of such a deprivation upon the Londoners. She wished to shut up the Park, and convert it into a private garden for the Palace, and asked Sir Robert what would be the expense. "It would be but a trifle, Madam," replied the Minister. "But what would it be as nearly as you can guess?" "Why, I believe, Madam, it would cost you *three Crowns*." Her Majesty understood his meaning, and replied good humouredly—"Then, Sir Robert, I will think no more upon it."

The following particulars concerning the Park are from Jesse's "Memorials of London," and other sources:—

"St. James's Park was originally enclosed by Henry the Eighth, shortly after he purchased the hospital of St. James, and the field attached to it. The wall, or rather paling, of the Park, formerly ran where the houses on the south side of Pall Mall now stand. Charles the Second removed it to its present boundary, and, under the direction of the celebrated French gardener, Le Notre, planted the avenues and disposed the trees as we now see them. The Bird-cage Walk was the favourite aviary of that monarch, and derives its name from the cages which were hung in the trees. Charles also formed the canal, and, in his reign, Duck Island took its name from being the breeding-place of the numerous waterfowl with which the park was stocked. The *government* of Duck Island was once enjoyed, with a small salary, by the celebrated St. Evremond. Pennant speaks of it as 'the first and last government,' but he is mistaken in the fact; it having previously been conferred by Charles the Second on Sir John Flock, a person of good family, and a companion of the King during his exile. Horace Walpole writes to Sir Horace Mann, on the 9th of February, 1751,—'My Lord Pomfret is made ranger of the Parks, and, by consequence, my lady is queen of the *Duck Island*.' This little island, which stood at the west end of the canal, was destroyed when some alterations were made in the Park in 1770.

"Another interesting feature of St. James's Park which disappeared at the same time, was Rosamond's Pond, situated opposite to James Street, Westminster, at the south-west corner of the Park. Its romantic appearance, the irregularity of the ground, the trees which overshadowed it, and the view of the venerable abbey, rendered it, we are told, a favourite resort of the contemplative; while its secluded and melancholy situation is said to have tempted a greater number of persons to commit suicide, especially unfortunate females, than any other place in London.

"In the pages of Pepys will be found many curious notices of St. James's Park, from the time that Charles the Second commenced his improvements there under the direction of Le Notre, till the Mall became the established lounging-place of the merry monarch and his gay court. We will select some scattered passages from the 'Diary' of the gossiping chronicler:—'1660, July 22nd. Went to walk in the inward Park, but could not get in; one man was basted by the keeper for carrying some people over on his back through the water.'—'Sept. 16th. To the Park, where

I saw how far they had proceeded in the Pall Mall, and in making a river through the Park, which I had never seen before since it was begun.—‘Oct. 11th. To walk in St. James’s Park, where we observed the several engines at work to draw up water, with which sight I was very much pleased.’—1661, April 2nd. To St. James’s Park, where I saw the Duke of York playing at Pall Mall, the first time that ever I saw the sport.—‘August 4th. Walked into St. James’s Park (where I had not been a great while), and there found great and very noble alterations.’

“In the time of the Commonwealth, when the ground to the north of St. James’s Park consisted of open fields, the game of Pall Mall, to which we find Pepys alluding, was played, as appears by a plan of St. James’s Palace printed in 1660, on the site of the present Pall Mall. We have already mentioned, that the paling of the Park originally ran where the line of the houses on the south side now stand, and it was against this paling that the game was anciently played. When Charles the Second, after the Restoration, removed the boundary of the Park to its present site, namely, the garden-walls of St. James’s and Marlborough House, the game was played between the avenue of trees nearest to St. James’s Palace, adjoining the present carriage-road. This fact we find established by a very curious print in the supplementary volume to Lord Lansdowne’s works printed by Walthoe, in 1732, and also in a passage of the well-known letters from Sheffield Duke of Buckingham to the Earl of Shrewsbury, in which he vaunts the splendours and advantages of his newly erected mansion (on the site of the present Buckingham Palace), and describes the rows of trees planted by Charles the Second as forming an admirable approach to his new abode. ‘The avenues to his house,’ he writes, ‘are along St. James’s Park, through rows of goodly elms on one hand, and gay flourishing limes on the other; that for coaches, this for walking, with the Mall lying betwixt them.’

“Spring Gardens, at the east end of the Mall in St. James’s Park, derives its name from certain gardens, or pleasure-grounds, which were laid out here about the reign of James the First, and in which there were several springs of excellent water. It is remarkable that every house in what is called ‘Spring Garden Terrace,’ has still a well attached to it. In the reign of Charles the First, we find a servant of the crown licensed to keep an ordinary and bowling green in the Spring Gardens.

“From Spring Gardens let us pass down the Mall to Buckingham Palace. Not far from the present Buckingham Gate stood Tart Hall, and the Mulberry Garden; the latter being planted in 1609, by order of James the First, with the view of producing silk in England. With this object he caused several ship-loads of mulberry-trees to be imported from France; and, in 1629, we find a grant made to Walter, Lord Aston, appointing him to ‘the custody of the garden, mulberry-trees, and silk-worms, near St. James’s, in the county of Middlesex.’ The speculation proving a failure, the Mulberry Garden, within a few years, was converted into a place of fashionable amusement. Dr. King writes, about the time of the Protectorate,—

‘The fate of things lies always in the dark:
What cavalier would know St. James’s Park?
For Locket’s stands where gardens once did spring,
And wild ducks quack where grasshoppers did sing;
A princely palace on that space does rise,
Where Sudley’s noble muse found mulberries.’ ”

The mere planting of the mulberry-trees cost £935, but this was not the only effort made by King James to improve this part of his domains, for we find, by the following copy of a warrant, that his Majesty had greenhouses erected there, for such, we take it, must have been the “certain houses and defences for orange-trees and other foreign fruits.” This warrant which must have issued between the beginning of 1605 and the close of 1607, is in these words.—(*Gentleman’s Magazine*.)

“James, by the grace of God, king of England, Scotland, Fraunce, and Ireland, defendour of the faith, &c. To our

trusty and welbeloved Sir Thomas Knyvet knight, warden of our mynt, greeting: Where we have appointed you to make within our parke belonging to our pallace of Westminster, comonly called Saint James parke, certeyne fountaynes, walkes, waterworkes, and other thinges for our pleasure, and certaine howses, and defenses for orange trees and other forreine fruites for the beawtifying of our said parke, and likewise certaine howses for the keepinge and feedinge of our reyne deere, and of our game of ducks. And whereas by the drecciou of the Earle of Suffolke, our chamberleyne, you have made certeine necessarie lodgings for some gentlewomen attending upon the Ladie Marie, our daughter. Theise are to will and anthorise you out of such our moneyes as are or shalbe from time to time in your handes, risinge by the profit of our minte, to pay or cause to be paid all such somes of money as shalbe requisite for the makinge, finishinge, and amendinge, of the saied fflowntaynes, walkes, waterworks, and other thinges, and for the saied buildings and keepinge of our games, according to such billes of charge of the same as shalbe subscribed by the officers of our workes for the time being or any three of them, whereof the surveyor or comptroller of our said workes to be allwayes one. And we are further pleased to graunt unto you an allowaunce of six pence by the day for the attendance of one man to keepe our said orange trees and other forraine fruites, and also an allowaunce of foure pence by the day for one other man to keep and feede our said raine deere, duckes, and other fowles in our said parke, to be also paid out of our moneyes arising by the profits of our said mynt. And theis our letters shalbe your sufficient warrant and discharge in this behalf. Given, &c. under our privie seale, at our ” (not completed).

THE knowledge is not very palatable to human vanity, that some of the happiest results in works of art have been the consequences of mere accident. The foam on the hound’s lips, produced in the picture by the sponge thrown at them in anger, is only one instance out of many; and in gardening, the happy hints arising from accident—or what may be termed the lessons quietly given us by nature—are of every-day occurrence. Thus we remember the very prettiest of low evergreen fences formed by the Larger Periwinkle (*Vinca major*) growing up and insinuating itself among the meshes of some iron netting. Then, again, how formal and unsatisfactory have we seen the attempts to sow in patches and train climbing plants among Roses; and we think our correspondent, E. F. H., must have experienced this, but we will be pledged to the success of this her “accidental” and more natural mode of treatment.—“I have for some years sown a thin broadcast of *Tropæolum canariense*, and of *Convolvulus major*, at the beginning of June, over a large bed of standard Roses, mixed with old shrubby plants. By August this bed has been beautifully wreathed with those climbers, and I do not think the Roses have suffered from sustaining them.”

At the sale of *Fowls*, by Mr. Stevens, on the 3rd inst., all the varieties, if the specimens were good, realised prices quite as high as ever. Lots 24 and 26, *White Shanghai* cock and pullet, fetched £6 each; a *Buff Shanghai* pullet, from a Sturgeon cock and Holt hen, £10 10s. The *Shanghaes* from Marseilles were not so good as previously, and the highest prices given for them were £2 17s. 6d. The *Silver-spangled Polands*, moderately good, sold from £2 2s. to £2 15s.; and the

Golden Polands, from £2, to £2 10s. A not particularly good young *Spanish cock* realised £2 17s. 6d.

Mr. Erps's specimen plants of *Heaths*, sold also by Mr. Stevens, fetched good prices, varying from thirty shillings to £8. The three highest sums given were for *Erica orbata*, £8; *E. retorta*, £5 10s.; and *E. Alberti superba*, £5 5s.

MANY circumstances contribute to render Orchid culture the aristocratic department of gardening. The costliness of the plants, and the expense of their culture, maintain them in that high position; but then their extreme beauty and loveliness first raised them to that eminence. The exhibition of orchids at Chiswick, and the Regent's Park, have been splendid during the last few years, yet the committee of the London Horticultural Society have resolved to add to the inducements held out to their exhibitors. In Class X., for twenty species in addition to the prizes already given, they now propose to give their Large Gold Medal (£15), and the Gold Knightian Medal (£10); in Class XI., for ten species, the Gold Knightian (£10), and the Gold Banksian (£7); and in Class XII., for six species, the Gold Banksian (£7), and the Silver-gilt (£4).

How much a taste prevails for the culture of Orchids, and, consequently, how great is the demand for plants, is shown by the prices they realise, when sold by auction, and by the consignments of them now arriving in this country. At Mr. Stevens's sale, about three weeks since, a fine specimen of *Phalænopsis grandiflora*, sold for £26 5s.; *Phalænopsis amabilis* for £18 18s.; *Aerides crispum* for £18 18s.; *Saccolabium guttatum* £17 17s.; *Vanda cœrulea* for £18 18s., and others in proportion.

Another sale takes place on the 19th and 20th inst., as announced in our advertising columns, and the collection, we are told, is of both rare and fine specimens.

COVENT GARDEN.

THE greatest attraction the market now presents is the profusion of handsomely-grown, stocky PLANTS IN POTS, which consist chiefly of *Geraniums* of all kinds, but principally the old *Gauntlet*; *Ericas*, such as *Hyemalis*, *Gardenia radicans*, *Ixoras*, and an immense quantity of *Cytisus ramosus*, very dwarf and bushy, with a complete covering of flowers. There are also potfuls of forced *Lily-of-the-Valley*, and all sorts of *Early Tulips*.

IN VEGETABLES there has been a better supply than we have been able to announce for some time past, but prices are still very high. *Brocoli* makes as high as 2s. 6d., and 3s. 6d. per dozen. *Greens* 4s. to 6s. per dozen bunches. *Turnips* 3s. to 4s. per dozen bunches. *Celery* 9d. to 1s. 6d. per bundle. *Onions* 4s. to 5s. per bushel. *Carrots* 6s. to 8s. per dozen bunches. There is a large supply of *Rhubarb*, *Sea-kale*, and *Asparagus*. The first may now be bought as low as 6d. per bundle,

and the others still maintain good prices. *Forced Grapes* make from 10s. to 15s. per pound. *Strawberries* 9d. to 1s. 6d. per ounce. *Forced Potatoes*, "real," as some shops distinguish them, make 2s. to 3s. per pound, but there are many lots of the *artificial* still being offered. *Old Potatoes* are rather lower, but prime qualities still maintain good prices. *Regents* cannot be had under £8 per ton. H.

FRUIT GARDEN NOTES.

WE have often adverted to the *Black Currant* as an instance of great apparent dormancy in the branch, coupled with the highest amount of activity of root. If a close examination be made after a sharp frost, the fibres will be found luxuriating with the utmost freedom in the half-decomposed top-dressing of the soil. It is thus, more or less, with most of our fruits, which are either indigenous or natives of the northern parts of Europe. With such as the Vine, Fig, Peach, Nectarine, and Apricot, the case is somewhat different, especially the two former, for the Peach and Nectarine, being budded mainly on the Plum stock, assume, in degree, similar habits; and no doubt their early excitability into blossom is, in part, traceable to this very point. A like argument applies to the Apricot, which is also an early bloomer.

The question of eligibility of *Stocks* is in its infancy; and we cannot here forbear expressing our surprise, that the British people, so notoriously fond of gardening, have not long since secured to themselves some means, which should, by a consecutive series of experiments, have set such questions at rest. It is all very well to say that our native enterprise alone will effect it; our advisers in this way do not say when. Were it a fashion, it would soon be carried; or were it a good commercial spec. But, although it is neither, it is still an important question, and not a whit the less important, because not one person in a hundred who cultivates a garden can appreciate its importance. This interesting question, therefore, remains in abeyance; and if it makes any progress at all, it merely creeps where it ought to fly. Societies will not do it; gardeners cannot, in these days, find time for merely speculative questions, which in their prosecution necessarily involve some failures; and our nurserymen know full well that rents and taxes are not thus produced. One object we have in view in thus adverting to the stock question (and, by consequence, drawing attention to the subject of early excitement in the blossom-bud) is to remind our readers that, although it only seems yesterday since we were talking about the falling leaf, yet that grafting and budding are now in operation.

Everybody who has watched the horticultural press during the last twelve-months, must have seen that the *covering* or *non-covering* of fruit trees has received an unusual share of attention; and that there are how's? and when's? as well as why's? in this question. And here we must be permitted to arrogate a little merit, as connected with this matter, having been the first to urge its importance *on the retarding system*. This phase of the affair, although not absolutely a new idea, has been passed over in silence amid the "clash of arms"—the question having been resolved merely into how many yards of canvass should be applied, rather than when.

When the period of plantation thinning and of general forest work arrives, we always announce that we intend to seize on all the spruce fir boughs that come honestly within our reach; and these, if all be well, shall be stuck over and amongst our embryo fruit

blossom-buds before the month of January is past—the thinning out, pruning, and dressing, being previously carried out.

This is no new practice here; we have yearly pushed the idea a little farther; and having mended, as to success, in every advance, we have small idea of retreating. We find that not only quantity but the quality of the fruit is enhanced thereby—at least, as attested by facts; for we never had Pears more abundant, or finer-flavoured, than last winter.

In a letter received the other day from a first-rate nurseryman, a great man in the Fancy Pear way—and, indeed, in all fruits—was a rather amusing remark. Having exulted somewhat on the success of the Pear season, we were emphatically reminded by our correspondent of our geographical position: “You may thank your northern climate for it.” Well, then, it occurred, of course, that the Edinbro’ folk were two or three degrees luckier still, but that they were as nothing compared to Johnny Groats, to say nothing of the Laplanders!

Now, suppose any gentleman, who is too highly favoured by climate, were to increase the amount of his northern latitude for a few weeks, by preventing the excitement consequent on sunshine, through the medium of a screen applied even before the excitement took place, where would be the harm?

To repeat what has before been urged in these pages: if Mr. A., whose garden joins Mr. B.’s, can, by retarding his blossoms, throw them a fortnight later than Mr. B., there can be no doubt, in the minds of reasonable persons, that in general the chances would be much in favour of Mr. A., inasmuch as every week in spring perforce lessens the amount of intensity of frost, or a very low temperature. And if a comparative immunity from severe weather be not favourable to the impregnation of the blossoms of fruit trees, pray what is?

With regard to trees in full bearing, and which, from being somewhat tender, require much solar light, it will be obvious that a somewhat liberal *disbudding* and *thinning out* becomes necessary, more especially of the late-made spray, which such trees generally produce pretty liberally, especially if somewhat luxuriant. The object here is to throw a little sunlight through all portions of the tree, and this being somewhat difficult with the ordinary formed standard, the utility of a trellis instantly suggests itself. Of course, in most trees of this kind, under a dwarfing system, some little shortening, in autumn, of the reserved points, becomes necessary, not only to keep them within due bounds, but to induce them to develop spurs, or the rudiments of them, which shortening back has a tendency to do. A very small amount removed will promote this object; too much shortening is a sad waste of material. It will, in general, suffice to remove any portion which may appear immature, or lean.

With regard to young trees in the course of being moulded into shape, it frequently becomes necessary to make a sacrifice in order to obtain shape; and shoots sometimes have to be cut away, or severely shortened, which, in the case of maturer trees, would have to be reserved.

Whatever sacrifice becomes necessary, should be made during the first two years after planting as far as possible; and if the trees are thriving, this is easily accomplished. It is not an uncommon thing to find young trees very unequal—one side full of weak shoots, and on the other, one or two gigantic shoots, revelling at the expense of the rest. Now this is a case for summer pruning, or, rather, stopping. Such will effect what the pruning-knife cannot do: it will turn this preponderance on the other side—into other and more needy channels. When such things have been omitted, such gross shoots must be reduced in length con-

siderably, with a determination to pinch any ramblers which may proceed from them as soon as six or eight inches in length.

The middle of young trees should be kept somewhat open at first, but not so open as the currant bushes. This will be the means of establishing good, firm shoots round the exterior; for the middle of the tree is apt to “run away with the outside,” to use a mere technicality: most trees, indeed, having a continual tendency to escape the artistical trammels of man, and to become ordinary standards.

R. ERRINGTON.

BEDDING OUT HERBACEOUS PLANTS AND BIENNIALS.

TOWARDS the middle of May, if the weather is fine, planting flower beds begins in earnest, and in ten days, those who did not calculate in time on the number of plants they require to fill up the beds, must needs either buy in more plants, or submit to have their want of foresight demonstrated by the wide distances between the bedding plants. Such occasions are the when and where to plant out and make use of autumn-sown annuals.

Bedding plants have kept well in most places this winter, as far as I can learn, and annuals not well at all, generally. I have only one simple piece of advice to give to the planters, but it is worth, I know not how much. *Do not plant too soon.* Do not plant just yet such plants as were but the other day taken from heat or close confinement; and be in no hurry in planting out such plants as have been recently bought, or received through the kindness of a friend. I have seen, I was well nigh saying a hundred times over, a whole month lost by transgression against this rule, in the hurry to get the planting done. The best planters are often obliged to take possession only of a certain number of beds for which the right number of plants are not quite ready, and I mention this to show the other side of the question. It is a bad practice to hold back any plants that are wanting *more pot room*, or are *too close together*, because there are not enough of them to fill the beds at once. Suppose No. 12 bed, on the plan, to be marked for the *Emma Verbena*, or the dark variety of *Senecio*, or double *American Groundsel*, and that it takes thirty-three plants of the first, or forty-three of the second, to fill this bed, and that you are ten plants short, which ten are nearly struck, or nearly ready to come out of the close pit. You may think it matters little to keep the first plants waiting till the ten are ready; but it is not so. It is much better to take possession, as the planters assert, of No. 12, with what plants are ready, and to plant all round the bed full enough at first, leaving the plants wider apart in the middle of the bed for the second lot to be put in between the first planting in ten days hence or later.

Petunias are very liable to be blown about too much in open and exposed places before they take root-hold of the bed, and many other plants suffer in the same way, particularly those with long and pliable shoots. The way to deal with such plants is to set the plants more to one side at first planting, and to fix them to their places as soon as the bed is planted. For laying plants to one side there is but one rule, and only two applications of it. If the plant is single-stemmed, the top must point to the north pole; if more stems than one, the weakest should point northwards and the strongest towards the sun at mid-day; and, whatever the position of the shoot, it must not be so as to turn any of the leaves upside down. I attach very great importance to these two applications of this planting rule. When a small plant, or a weak shoot, is fixed in a slanting way to the north, every morsel of the leaves look full in the

sun, and the sun will draw the new growth, as it were, to the south to fill up the space, like killing two birds with one stone; the best position for the plant to be in, and the surest way to fill up bed space. When a plant is trained south the leaves lie the other way, which is not so good for them; and if, by any means, a leaf must be turned upside down, it is ten times better for the plant that it should be cut off. One very easy way of fixing a young plant where you require is to lay it nearly flat on the ground, to make choice of a leaf near the end of the shoot, to make a little hole under this leaf in the bed with the forefinger, then to turn down the leaf into this hole and to fill it up gently with soil, as if you were planting some nice cutting. Sometimes two leaves must be fastened down, one on each side of the shoot; this mode is called "tying in by the ears," and the youngest boy in a large garden understands the phrase to mean nothing else, except, perhaps, his own ears, if he does not finger the plants properly.

The philosophy about the functions of leaves is not outraged by such practices in the least degree, although burying the half or three-parts of a leaf into the soil is as bad as pulling off another that was turned the wrong way upwards. Neither of them comes within the letter of the law at this moment, for this reason, the best of us cannot, and never did, remove one plant from a pot for planting elsewhere, or for repotting into another pot, without some slight injury to one or more of the roots; then, as the leaves and roots help each other, and sympathise with each other, the least injury to a root withdraws so much sap from a leaf, or so many leaves, that it becomes actually a work of scientific skill and discrimination to pull off this or that leaf, or fasten the plant by it, at a time when the force of the roots is thrown out of balance. It is true enough, that all the world do not take this view of the question; and a very good thing too; for if all the world knew the right way of doing things, there would be no use for books on gardening, and all the gardeners might go to the diggings.

There is a trick, well known to expert planters, by which they can save appearances, and I think it is the very last secret that I have to put on paper. I have made use of it myself scores of times. The causes for it often arises in this way. The stock for bedding is made out in the preceding autumn; the chief of the plants are then propagated, and the rest from February to the end of March; but from some alterations in the garden, or from a change of purpose in the minds of those concerned, a whole side, or a certain number of beds must be planted with quite a different lot of plants from those marked out for them in the autumn. Instead of thirty-three or forty-three plants for the dark purple bed, No. 12, that bed, at the eleventh hour, is to be planted, and *must be* planted entirely with white Verbenas; and, in looking in the propagating book, you discover that, at the farthest, there can be no more than eighteen or twenty plants of white Verbenas to spare from the distribution that was made of them last autumn. Here is a fix—thirteen plants short for one bed, and thirty-three plants more than enough of the opposite colour, and no use for them! If we say that fifty or a hundred beds are thus in opposition to the propagator's book, and I have known as much ten times over, the difficulty is really more than a fix—a regular loosening of all the bands and bonds which keep the whole garden together. Now, without harm to anyone, my last secret can bring about a balance in less time than most of my readers could believe, and No. 12 bed will give the references to all the rest. Last autumn it was marked for thirty-three dark purple Verbenas (*Emma*), now it is to be of thirty-three white ones (*White Perfection*), and you have only twenty to do it with.

Then plant round the bed in full, as I said before, all with whites, and put the centre ones wider apart, then fill up the ground with the dark ones, and put a bit of stick by the side of each, that you may know it from the white ones. The man in the moon could not know the white Verbenas from the dark Verbenas till they came into flower, and somehow or other, the dark ones never do flower till the white ones are spread all over the bed, when it is time to pull up all the blacks, be done with them and say nothing about them. It is very likely *some one* pulls off the flower-heads of the false plants, or, rather say, those in a false position, before the flowers open! But it is very difficult to have out that part of the story, and as the rest of it may come in very useful at this very season, to save appearances for a while, we must not pry too closely where nothing is to be gained by it.

About the middle, and to the end of May, is a good time to sow *biennials and perennials to come into flower next season*, after being once or twice transplanted—first, in September, to nursery beds, and in February or March to where they are to flower. Also, some that will flower this next autumn. Of the latter, *Mignonette*, *Sweet Peas*, and the *Eschscholtzias*, are the most deserving, and all of them will flower on to the very last day in the season, if they are sown by the 20th of May where they are to flower, and both the *Mignonette* and the *Eschscholtzias* may be sown in the same front row which is now filled up with some edging plant that will be over by the middle of July, so that there need not be a spot unoccupied all the season through.

Antirrhinums and *Wallflowers*, from a May sowing, come in very handy to plant out next October, when the summer plants are removed, to help to keep the beds green all the winter, and early in the spring they may be disposed about as circumstances may require. *Hollyhocks* to be transplanted next October or November; *Scabious* the same, but should be well guarded against frost, when they would flower three months sooner than if put off till next spring. The *Poppy* and *Russian Anemones* (*A. coronaria* and *præcox*), to bloom late next autumn, through a mild winter, or early in the spring; all the *Aquilegias* and *Campanulas* that one can buy seed of. *Catananche cærulea* and *bicolor*, to flower next year, and afterwards. All the *perennial Larkspurs*, as the Chinese (*Delphinium Chinense*), than which we have none better for blue beds, when the best varieties are selected from a seed-bed, and the roots taken up and preserved like those of *Salvia patens*, *Delphinium azureum*, *lazulinum*, *speciosum*, *tricolor*, and *puiceum*. All the *Forget-me-nots* and their seeds may be scattered in any wild ground that was lately dug over. *Dianthus*es, in a vast variety of sorts, of which the following are all gay and lasting flowers—the best Sweet Williams (*Dianthus barbatus*); Indian Pinks (*D. chinensis*), keep over the first winter, when sown as late as the end of May; *D. plumosus*, or *plumasius*, the sweetest of all the Pink tribe, and will do on rock-work; also *D. deltoides*, with bright pink flowers, on rock, or edge of a border, and all of them in some quiet corner, to come in for cut flowers. *Dianthus atropurpureus*, *hispanicus*, and *latifolius*, with *superbus*, run into a great number of useful and very gay varieties from seeds. *Geraniums* and *Potentillas* can be had in dozens, by sowing seeds of them at this season. All the best perennial *Lupines* are still in good time for sowings, and getting scarce for want of such supplies. *Lupinus polyphyllus* and *polyphyllus albus* are the two best *Lupines* of the perennial class; and *L. grandifolius*, *ornatus*, and *speciosus* are not much behind them. There are more than a dozen of sorts of the Rock Rose (*Helianthemum*) that can be had in the seed-shops; and this is just the time to sow them, to be removed to the rockeries, or root-

eries, next March. The scarlet *Lychnis* (*L. chalcidonica*), the *Lychnis fulgens*, and *Corsica*, are excellent and select border flowers, and all of them come from seeds. *Lythrum alatum*, *roseum*, and *roseum superbum* the same. *Penstemons*, again; how few we cultivate of them, besides the common red and white, called *gentianoides*. The true *gentianoides* is a good wilderness plant, rising five feet high, with purplish flowers. The old *Trachelium cceruleum*, if sown along with these, and kept in a cool frame next winter, and planted out next April, would make one of the most exotic-looking beds in the garden for three months next summer. I had it so, and many more besides, which I cannot think of to-day. To attempt to sow a full collection of nice plants in the spring is now out of the question; the soil is cold, and too damp for many of them out-of-doors, and no spare room inside.

D. BEATON.

CONIFERÆ.

(Continued from page 62.)

TAXUS (The Yew).—The branches of this well-known tree, when England was famous for its archers, furnished the wood that formed the best bows for that weapon: hence its name is derived from *taxon*, a bow. The Yew is very hardy, and will grow in any soil, not actually wet; but, to thrive well, it loves a rich, deep, dry loam. The common Yew may be transplanted at almost any age; the roots are so numerous and fibrous, that they retain the soil about them in a solid mass. The late Earl of Harrington (aided by his intelligent gardener, Mr. Barron) took advantage of this peculiarity, and removed large Yews, the age of which was beyond the memory of the oldest inhabitants of that district. I was assured by Mr. Barron, that many of the large Yews now ornamenting the grounds at Elvaston Castle had been fetched from hedgerows several miles off; and when I saw them, about two years since, they were full of branches, and of the darkest green, apparently growing better and more freely than they had done for years previously to being removed. Many of these Yews had stems (gnarled and crooked from old age) quite as thick as a stout man's body. So large were they in size, that any one not used to the skill of the transplanter would have pronounced it impossible to remove them, even the shortest distance. Mr. Barron uses a machine that he invented himself, of a most powerful character, capable of lifting a tree, with its ball, several tons in weight. I have seen this instrument used for that purpose in the grounds belonging to C. Mills, Esq., of Hillingdon House, not half-a-mile from the place I now write in, and can testify to its powers, and the perfect success which attended it. I have not seen the one lately used for the same purpose in the London Horticultural Society's Gardens, at Chiswick, by Mr. Mc Glashen, and ably described lately, by my friend Mr. Beaton, in the pages of this periodical; but I am quite sure it cannot be superior, as a transplanter, to Mr. Barron's implement; and it is to do justice to the inventive skill of a worthy man that I have written so long a story about removing large specimens of the Yew, as well as other trees, to which I shall return at a future time.

TAXUS ADPRESSA (Close-pressed Yew).—A curious dwarf tree, growing sideways; hence it is proper to ornament rockwork, or to clothe naked banks. To grow it as a single specimen in the Pinetum, it is necessary to tie the leading shoot to a stake for several years, until a decided upright character is given to it.

TAXUS BACCATA (Berried, or Common Yew).—This is so well known, that I need not describe it; there are, in the nurseries, several varieties, named *T. B. nana*, syn., *Taxus Faxonii*, a neat dwarf bush.

T. B. erecta (Upright Common Yew).—This is distinct from *T. fastigiata*, mentioned below.

T. B. Dovastonii (Mr. Dovaston's Weeping Common Yew).—A decided weeping variety. To have it in perfection it should be grafted upon a straight branchless stem of the common species, or it may be trained to a stake, till it is high enough to display its weeping propensity to advantage.

T. B. elegantissima, a beautiful variety, with a most elegantly variegated foliage.

T. B. foliis variegatis (Golden-striped Common Yew).

T. B. foliis variegatis argenteis (Silver-striped).

T. B. fructu luteo (Yellow-berried Yew).—This should almost be considered as a distinct species, but for the fact, that both red and yellow fruited trees spring from its seeds.

T. B. marginata (Bordered Common Yew); and *T. B. pyramidalis* (Pyramidal Common Yew).

TAXUS FASTIGIATA (Bundled, or Upright Irish Yew).—A most remarkable and useful species, and quite as hardy as the common Yew. Its great use is the forming of avenues. A very fine example of this kind of avenue is at Elvaston Castle, the place so often referred to as containing the richest collection of Coniferæ in Great Britain. This species has its varieties also; but they only consist of the silver and gold striped Irish or Florence Court Yew.

TAXUS CANADIENSIS (Canadian Yew).—The only species found in the Western Hemisphere. It is a low bush, seldom reaching six feet in height.

TAXODIUM DISTICHUM (Two Ranked-leaved Taxodium).—When this tree is in full foliage there are none that surpass it in elegant beauty. It is amongst the very few Coniferæ that are deciduous. To grow it to perfection, it should have a deep, rich soil, and be sheltered from high winds. The finest specimen I know may be seen in the Arboretum at Sion House, Isleworth, the noble residence of the Duke of Northumberland, situated on the banks of the Thames. No doubt the soil there has been, ages back, formed by the deposits from the water, a kind of soil admirably adapted for this fine tree. In America it grows to more than 100 feet high, with a proportionate stem.

TAXODIUM SEMPERVIRENS (Evergreen Taxodium).—One of the gigantic denizens of the forests of California. Mr. Hartweg describes the tree as averaging more than 200 feet high, with stems more than twenty feet round. The wood of this noble tree is unfortunately light and brittle, but of a beautiful red colour, and of a fine, close grain. It grows rapidly in this country. I have seen leading shoots in one year five feet long. In exposed situations the foliage turns brown in winter, and sometimes the leading shoot, in very severe frosts, suffer a little from the intense frost. It may, however, be considered quite hardy, as there is no record of its being killed by the hardest winter we have had since it was introduced. The foliage is a dark green, and the form the tree assumes is pyramidal. Decidedly a great acquisition.

T. APPLEBY.

(To be continued.)

THE CARNATION.

THOUGH I have already written upon the culture of this beautiful summer flower, there are several reasons that induce me, as briefly as possible, to give again the principal points, with additional matter, preparatory to drawing up a list of the best varieties for 1853. One reason is, the information has been asked for by several correspondents; another reason is, that there are now a great number of new subscribers to THE COTTAGE GARDENER, who have not had an opportunity of seeing

my former remarks; and, lastly, there are some improvements in Carnation culture that are worth noting.

Soil.—This is a very important article: without good soil it is in vain to expect good show flowers. Old garden mould is not at all fit for them; fresh virgin loam is absolutely necessary. It must be looked for in upland pastures, and the upper stratum, about three inches thick, is the best. This should be carted home, laid on a heap, not too thick, and be turned over frequently to decompose the grassy surface. Add to this, about one-fourth of two-year-old, well-decomposed cow-dung, and the same quantity of leaf mould. A small quantity of finely-sifted old lime-rubbish will be found useful to mix with it: this keeps the soil open, and helps to decompose and sweeten it. The compost, previously to being used, should be put into a place where it will gradually become moderately dry.

Potting.—The plants having been duly taken care of through the winter, prepare for potting by looking out the proper sized pots for blooming. These are from ten to eleven inches in diameter. If not new, they should be well washed and dried. Let the drainage be abundant, at least an inch thick, and cover it with another inch of the roughest part of the compost; turn the plants, in pairs, carefully out of the store pots; fill in sufficient compost to raise the ball nearly level with the rim of the blooming pot; then gently loosen some of the outer roots, and rub off the old surface mould; place the plants in the pot, and fill round the ball till it is covered; press the soil down gently, and give a smart stroke or two upon the bench; this settles the soil equally, and then the operation is finished. This potting should be done before the middle or end of April. The plants should be protected by an awning from heavy rains and late spring frosts, but in fine weather should be fully exposed to its influences. Gentle showers will do them good; it is the heavy, splashing storms that injure them.

The London Horticultural Society, for the last two or three years, has given prizes for Carnations in pots. Now, if it is intended to compete for such prizes the potting should be accordingly. To make a better show there ought to be more plants in each pot. Each plant only sends up one flower stem, and where only a pair in each pot is exhibited the blaze of flowers is too weak to be effective. I am quite sure four strong plants would make a far better and more effective display. Why not? As the schedules are generally sent and distributed early enough for the potting season, there is plenty of time to prepare the requisite number of plants.

For growing blooms to exhibit as cut flowers, one, or, as is generally practised, a pair of plants in a pot is not only sufficient, but desirable, in order to produce larger blooms; but to be shown in pots, I think I am right in recommending three or four plants in each pot. I perfectly remember the Carnations that were shown in pots made but a poor appearance on the stages at Chiswick, because the blooms, though individually good, were so few in number, that the appearance, as a whole, was by no means up to the mark of splendid effect compared with other flowers. Even the humble Pansey, in pots, surpassed them. Much might be said in favour of this mode of exhibiting all florists' flowers usually grown in pots. The great use of exhibitions to the public is seeing how the flowers are managed to bring them to such perfection; and there can be no better plan devised than that of shewing them the plants, as well as flowers, on the stages. I trust florists generally will second the Horticultural Society's well-meant efforts, and grow Carnations, Picotees, &c., in pots, purposely to be exhibited in them.

After the potting is finished, and the plants so placed as to be protected from heavy rains, worms and other

insects, the only care they require is the supplying them duly with soft rain water, and sometimes with weak liquid-manure, as they require it, and placing stakes to them, in time to support the rising flower-stems to keep them in an upright position. Tie loosely, so that the stems can lengthen without forming knees or bended joints. If tied very tight this will certainly happen, and the stem will in time break off at the bended joint. Let the cultivator, then, be careful to tie his Carnation, Picotee, and Pink stems loosely, to prevent such an occurrence.

When the flower-buds are advanced to a considerable size they must have a ligature placed round them to prevent their bursting on one side. The best are made of India-rubber bands, which may be obtained at most stationers' shops. These are superior to the common garden mat, because they are elastic, and, consequently, allow the bud to swell, but are sufficiently tight to cause the calyx, or green flower-cup, to open regularly all round.

When the flowers begin to expand, it will be necessary to shelter them from the sun. The most effectual method is a stage with a covering of canvass on rollers that can be rolled up and let down at pleasure. This should be elevated on a frame high enough to walk under. Such cultivators as have not the convenience of a stage must have shelters formed like a small parasol, having a socket in the middle to slide down the support sticks just far enough to shade and protect the flowers. These may be made of tin, painted green, or of zinc, or a frame made of stout wire, of the same form, and covered with oiled canvass. This sort of shelter, however, can only be considered as a make-shift. The covered stage is the best, most effectual, and most lasting, besides the advantage of being constantly under the eye to watch the progress of the flowers, and admire their beauty when in full bloom.

Thinning the Buds.—Select three or four of the most promising on each stem, and nip off the remainder. This rule applies to such as are intended for exhibiting as cut blooms; rather more should be left for those to be shown in pots. Six or seven would not be too many, if the plants are strong, in this case.

T. APPLEBY.

(To be continued.)

VEGETABLE-MARROW.

MANY years ago, the Gourd family, to which this useful vegetable belongs, was held in much greater estimation than at present, although, in point of utility, the varieties now in existence far exceed those of that day, which were, in fact, mere objects of curiosity. Some, indeed, professed to admire them when prepared in a certain way, yet these parties formed exceptions to the general rule. But as the "march of intellect" has stripped these singular productions of all merit, except what arises from their value as an adjunct to other things at table, the "standard of excellence" has assumed another shape, and the huge production of former days, which by its bulk used to astonish the uninformed beholder, is no longer tolerated, unless at some period of its growth it can be made subservient to our uses, by administering in some way to the general "bill of fare."

This change in the public taste has not, however, become universal; as we now and then meet with fruit exhibited at Horticultural Shows of a kind meriting the approbation of our fore-elders. Without, however, in any way disparaging these articles of novelty, which in their way are not only excusable, but highly recommendable, we come to the task of saying a few words on

the culture of the more profitable kind, which time and an almost-unanimous public has stamped with its approbation.

This useful vegetable is of more easy cultivation than many would suppose. All it wants is plenty of room, and a soil rather sound and deep than rich, as the latter is apt to produce a grossness in habit incompatible with fruitfulness, while the shallow soils of some situations, or, what is equally bad, the overcrowding of plants, is at variance with their well-doing by their hastening to a premature end before the purpose they were intended for has been accomplished.

Our readers who may have seen the mildewed appearance that this plant presents at times as early as August, will have some idea of the impropriety of denying it the room calculated to ensure a more healthy growth. And though it would be wrong to say that mildew is always the result of over-crowding, or a want of proper food, yet we think that these reasons very much encourage it, and we know it can be kept a considerable time in a healthy condition, by securing it the advantages of a good depth of sound, fresh loam, of a kind not too stiff, but at the same time not too light, and by a proper thinning of the shoots, or, what is equally useful, by not planting too close at first, and allowing plenty of room in all directions afterwards; and in a very dry or hot summer, a partial shade will not be without its benefits.

We have seen it grown in the alleys between beds of Asparagus, and we have seen it shaded by the high wall of the garden, or sometimes that of trees, the latter, we think, is certainly the most objectionable, and more likely to encourage the disease we wish to avoid. It is not unusual to see a fine plant of Vegetable-marrow, or some other of the gourd tribe, luxuriating in the highest state of perfection on the rubbish-heap, where, perhaps, a little spot has been cleared, and a plant put in. By rubbish-heap, we mean that accumulation of refuse matter which will neither burn, nor dig into the ground with care, yet the decayed matter, mixed with an abundance of stones, seems to suit the wants of this plant admirably. When, therefore, there is a heap of this kind on a spot not encumbered with trees, and safe from cattle or other depredators, it would be well worthy of a trial for this purpose. Heaps of compost would, of course, be better, but it is rarely these can be spared for this crop. If they are not likely to be wanted for other purposes, ridge Cucumbers would seem a more legitimate crop, and one to which more attention is usually paid. However, the Vegetable-marrow is well deserving a place in every garden, but to the amateur who has never grown it before, it is necessary to caution him against planting it near to any small-growing crop, for if it thrives, it will, assuredly, overgrow them, and the chances are, that either the weak one will be fairly destroyed, or the rambler useless, by being denied sufficient space to grow in. It is no unusual thing to see a single Vegetable-marrow plant occupying as much space as an ordinary-sized room, and often more than that, yet at first planting it is better to plant two or three in the plot, and to pull one or two up afterwards, when it becomes apparent that one is likely to occupy the whole space.

As we recommended, some time ago, that the seed of this vegetable should be sown in pots, and placed in heat, we can say no more here than suppose the plants to have been potted off singly into five-inch pots, and being gradually hardened off, are now in a condition to be planted out under the shelter of a hand-glass, or other contrivance, to encourage them on awhile; and, as the number of plants for most ordinary purposes must necessarily be small, we would suggest that a barrow-load of good soil be allowed to each plant, if

that of the plot they are to occupy be not sufficiently good. This good soil will give them a start, and when they have seemingly occupied it all, and the plant requires additional food, liquid-manure may, to a certain extent, be given it. We should observe, that one or two stoppings will also be necessary to the long, rambling shoots, for it partakes a little of the character of the Melon in that respect, and requires frequent stopping to encourage the fruit-bearing blossoms to swell out; but after the plant has once begun to bear tolerably well, thinning, rather than stopping, must be resorted to; and if the situation be an exposed one, let the shoots be pegged down, or, what is equally good, short stakes stuck in amongst them will keep them in their places, and they will be less likely to suffer from mildew, &c., in such a position than in more snug quarters; but, wherever they be planted, it is proper to be prepared to expect them overgrowing their allotted space, unless the latter be the unlimited domain of the rubbish-yard, or other large place.

As we have said, the plant is subject to red spider and mildew in the latter part of the season, and sometimes this evil befalls it sooner than is wished for. We advise the first symptoms of it to be met with a careful picking off the affected leaves, and dusting those in their vicinity with sulphur; and if it be dry weather, and the ground evidently suffering from want of moisture, a copious watering will be of service, adding a little liquid-manure as well. This usually wards off the attack for a time, and a repetition of it at the proper time has a like beneficial effect; so that, on the whole, the season is prolonged, and the plants, if not kept in robust health, are, at least, in that fruitful condition which ensures a continuance of a nice useful produce; and though the plant is sure, sooner or later, to fall a victim to the disease we speak of, yet if it maintain itself in vigorous bearing until killed by the frost, the cultivator will have been rewarded by a fair share of produce for his trouble, provided that the same plants commenced bearing pretty early as well.

It is scarcely necessary to enumerate varieties, for they all have their merits, but the "plain yellow" has with us given most satisfaction. There is a kind producing its fruit in great numbers near to the centre of the plant, but it has no other merit save that it produces less vine, but then it rarely keeps on bearing; so that, on the whole, it is worse than the older kinds. Some kinds have also a tinge of the Pumpkin breed in them, and show more or less of the showy colours this class is mostly patronised for, but we caution the inexperienced against trusting to these, unless they be recommended by competent and trustworthy parties as comprising the requisite eating properties as well. But as the majority of those who partake of this vegetable prefer it in a young state, when about the size of a kidney potato, it is seldom that those showy kinds present their markings at that early age, and if not, their appearance is, on the whole, less beautiful than those of less pretensions that way; and, as we have said at the beginning, utility rather than beauty should be the criterion here.

J. ROBSON.

CULTIVATION OF MANGOLD WURTZEL.

THE preparation of land intended for a crop of Mangold Wurtzel should begin as soon as possible after harvest, because the early period at which the seed must be put in does not give time for cultivating the ground in a proper manner during the spring months, more particularly when the land is encumbered with couch grass.

Therefore, as soon as the corn is carried from the land, if it be foul use the scarifier to a moderate depth, just sufficient to cut up the couch grass and any root weeds which may be found on the surface; then use freely the harrows,

roller, &c., until the land is made perfectly fine, and the weeds separated from the soil; and take the first opportunity of favourable weather, and burn the stubble and rubbish altogether, after which the land will be in a fit state to receive the first deep ploughing, and at the same time subsoiling, if the nature of the soil requires it, for it must be borne in mind that Mangold requires a deep soil; then proceed as before, and roll and harrow until a perfectly pulverised surface is obtained, and again burn those weeds which may have been collected during the work. The land will then be ready for deep cross ploughing, and also subsoiling; for I believe the subsoil is never thoroughly stirred unless the subsoil plough is used lengthways and crossways.

The land may now remain during the winter, and receive the full benefit from alternate frost and rain; and when the weather becomes favourable in the spring, proceed with the course of culture according to the mode of planting required. If intended for stretch culture, begin by drawing stretches at two feet or thirty inches apart, with the double mould-board plough, according to the nature of the soil and the kind of manure used. When yard or town manure is used, the carts laden with manure should pass along the stretches, the wheels being in the furrows. Two men will be required to cast the dung from the carts, and four women to follow, spreading it regularly in the furrows. At the same time it is desirable that the plough should immediately follow, splitting the stretches and covering in the manure to prevent loss by evaporation; it will then be in a good state to receive the seed.

In case artificial manures are used (such as guano, &c.) which are rich in ammonia, they should be sown broadcast upon the stretches just previous to splitting them and ridging for the last time; but when superphosphate, or bone-dust, and those manures not likely to damage the seed are used, it would be best to drill with ashes at the same time as the seeding takes place.

I do not, however, advocate ridge culture for Mangold under all circumstances, for I have obtained excellent crops on the flat, when it has followed a turnip crop fed off with sheep, or on very light land, where it is sure to work fine. In these cases the manure may be laid out, and the land ploughed directly, being worked by harrows and roller to the proper tilth, and drilled immediately, which will retain the moisture of the land, and insure the vegetation of the seed. In this manner, also, good Mangold may be grown upon some strong soils, for such land scarcely ever works fine enough to sow on the stretch.

The best time for sowing Mangold is the first week in May, for it often happens that frost does injury to the young plant if put in before that time, and the weeds are sure to advance rapidly, if the plant makes but little progress, thereby increasing the expenses of cultivation.

The quantity of seed required will range from six pounds to seven pounds per acre, according to the mode of putting in; for, whether by the drill or dibble, a liberal quantity of seed is always desirable, because the plants, when moderately thick, not only stand the best chance of a sufficiency being left, in case of attack by fly, &c., but grow so much faster whilst young, that they become secure from the enemy at a much earlier period.

The best soil for Mangold is a deep rich loam, but there is scarcely any root which will grow for the purpose of cattle feeding which can be successfully grown upon a greater diversity of soils, particularly when the land has been well tilled and manured, and also where the climate is favourable; for it is known to practical farmers that this root, unlike the turnip, delights in a warm, dry climate, like the eastern and southern counties of England.

The writer has been very successful in the culture of Mangold upon land situated close to the sea, and believes the air from the salt water to have a very beneficial effect upon the plant. The kinds of Mangold most usually grown are the *Long Red*, *Long Yellow*, and *Yellow Globe*. I think the *Long Red* best for deep rich loams, but for strong lands, or soils in general, I prefer the *Yellow Globe*, or the *Long Yellow*, these varieties being more nutritious than the *Red*, as well as more easily cultivated upon ordinary soils.

When it is inconvenient to apply dung, Mangold can and has been grown very successfully by the aid of artificial manures, a greater quantity being, however, employed

than is usually bestowed on the turnip crop. A compound manure may be employed, consisting of superphosphate and Peruvian guano, or, otherwise, two-hundred-weight of Peruvian guano and two or three-hundred-weight of salt may be applied broadcast previous to the last ploughing, and two-hundred-weight of superphosphate drilled or dibbled in with the seed.—JOSEPH BLUNDELL.

DISEASES OF POULTRY.

INFLAMMATION AND ULCERATION OF THE STOMACH.

THE body of a prize Shanghai fowl was recently forwarded to me for examination, with a statement, that it had for some time refused its food and been moping; and that it had been treated with rue and butter, Epsom salts, castor oil, and latterly with calomel and tartar emetic, but that under each treatment it continued to get worse, and died, much emaciated. On examination, I found that the case was an exceedingly instructive sequel to the one described at page 450 in the last volume, being inflammation of the true digestive stomach, (viz., the proventriculus,) which had run on to ulceration; in the natural state, this organ (which forms the digestive fluid) is not larger than the thumb; in this case, from the inflammation and subsequent ulceration, no digestive fluid had been formed, hence the food could not be digested, and it had accumulated to such an extent that the stomach was, at least, four times as large as the gizzard, and filled up the whole interior of the animal, pressing on all the other parts, and causing their decrease in size.

I have had several fatal cases of the same kind under my notice, but in none was the part enlarged to such an enormous extent. The disease is not uncommon in highly-fed fowls; and when birds mope, and refuse their food, without any marked symptom that other organs are affected, its presence may be suspected. The treatment adopted in this case was the worst that could possibly have been followed. Stimulants, such as rue, drastic purgatives, as salts, &c., were employed, and the bird was tempted to eat by enticing foods. The disease is necessarily fatal in advanced stages, but at an early period it may be cured by a very low unstimulating diet, as rice boiled to a very thin pap, and given in small quantities. Medicine is of very little use, but above all, the employment of stimulants must be avoided. The success which has attended the plan of treatment that I suggested for inflammation of the egg-passage, viz., calomel and tartar emetic, has been followed by one evil result; the same remedies have been given to birds ill with other diseases, and, of course, without benefit. It should be borne in mind that there is no universal medicine for poultry disorders, and that a remedy, though perfectly adapted to the alleviation or cure of one complaint, is not likely to benefit another, but, in all probability, may aggravate its symptoms to a very great degree.

The treatment above mentioned, although very efficient in checking the inflammatory action of an excited egg-passage, would increase very greatly the irritation of an inflamed or ulcerated stomach.

I cannot let this opportunity pass without thanking collectively, as I believe I have done individually, those persons who have kindly forwarded me dead and diseased birds for examination. All ranks in society, from the peer to the peasant, have done me the honour of soliciting my advice, and have aided in increasing my experience. If I were asked to state, in a few words, the most important result that the very attentive examination of these numerous cases has led me to arrive at, I should reply, that more than three-fourths of the deaths have been owing to diseases caused by over-stimulating food; meat, greaves, hemp seed, and peas, have greatly aided my experience, by furnishing my scalpel with numerous subjects. Apoplexy, especially in Shanghai fowls, inflammation of the stomach, and inflammation of the egg-passage, are all registered in my case-book by the dozen.

I may add, that I shall always be most happy to receive any dead or sick birds for examination, and if the cases are new, or present any peculiar points of interest, they will be

published in these pages; and even if they present nothing novel, shall be most willing to communicate the results privately to the sender.

W. B. TEGETMEIER, *Tottenham, Middlesex.*

VIOLETS FOR WINTER BLOOMING.

ALTHOUGH such an excellent paper has recently been given by that practical and scientific man, Mr. Fish, I beg to offer a few hints upon the method I have practised for many successive years. I have cultivated most of the varieties of these beautiful little flowers in my time, but now I content myself with only two of its varieties. Of these, I think the best is the *Double Neapolitan*, which is of a beautiful lilac colour, and I would rather look at a two or three-light frame filled with this one kind, than see a mixture of violets there varying in colours, and single and double in form. Although, as Mr. Fish justly says, the *Neapolitan* is too tender to stand out-of-doors during the winter, without protection, yet, with protection, it is less liable than any other to damp off during muggy weather in the winter months. This kind forms, better than any other, a compact evergreen bunch, with its leaves and flowers; and even its stolons, or young shoots, incline upwards from the earth, and improve the group.

The other kind we grow is that called the *Tree*, or *Perpetual Violet*, but we grow it not as a tree, but treat it as we do the other.

Now of these two kinds, I have as many pots as will fill a two-light frame every year, and from them we are able to gather flowers, more or less, during all the winter and spring months. I have frequently taken two prizes for these same pots of plants at the Winchester Horticultural Exhibitions in November and March, which is some proof of their well-doing.

When the flowering season is over, I make up a nice little bed in a cool part of the garden, towards the end of April, but open to light, and not too near walls or the shade of trees. The soil is well dug and worked up, and the bed marked out, three feet wide, a few crumbs are thrown up from the sides, and then I treat it with a barrow-full, or more, as the case may require, of well-decayed manure from the frame-ground, such as leaf-mould, with a little loam mixed with it, or old manure of some kind, such as would all pass through a sieve if required. This manure is placed over the surface of the bed, and then the spade again goes to work chopping and working it in thoroughly, so that no rake is required, and should there be a slug in the soil it would have but a poor chance to escape the many chops with the spade. The sides are then marked out, leaving the bed four or five inches higher than the path, and the bed is ready to receive the plants. Of course my mind is made up as to the number of plants I am going to plant out, so that the size of the bed is made accordingly. If I want fifteen pots of each colour, or kind, to fill my frame, I plant that number, allowing about six over. My bed being three feet wide, just holds three plants across it, and the same distance apart in the row, or about nine inches from plant to plant, every way.

The old flowering plants are turned out of their pots; are divided into quite single crowns, and every broken, or faulty leaf, is removed, and the long and straggling roots cut away. They are then planted with the *dibble*, and if on a dry day, a little water is given to settle the earth to the roots. If the lime-bag is made use of the same evening, for the purpose of giving a slight dusting of quick-lime, all the better, for it prevents the worms drawing the plants out of their places before they are established; and should there be a slug on the prowl, if the lime-dust which reaches him be not strong enough to kill, it causes him to turn back another way.

After the plants have been bedded out three or four days, look them over, and open the earth carefully right up to the plant, and see that every plant is in a fair way of doing well; or should any one have failed, make it good immediately. Never let the season be lost, because, if you do, you must afterward have a patchy bed.

Nothing more will be required but frequent earth-stirring

and keeping all the little side-shoots plucked away; but I never remove any of the stronger crown-like runners.

I allow the plants to increase this way in the bed until the first week in September, when I lift them all into pots again; that is, I pot off as many as will fill up my two-light frame again. Should a dull afternoon, or wet, misty day, happen about this time, I never let it escape, but lift my plants immediately, fetching them in from the bed in a sieve, three or four at a time, to the potting-bench, and as the plants are potted they are watered and placed upon boards under a north wall for a time, and should the weather be dry and hot, as it frequently is at this time, the plants are sprinkled over every evening with water.

If carefully potted they will put out a host of side-shoots, which should be plucked away as often as they appear, and every decayed leaf removed. Slugs I look after at the time of potting most sedulously; yes, and at all other times too. I do not know what sort of palates slugs have, but they are just as eager to devour a young Tobacco plant, or a *Petunia*, as a sweet Violet.

Towards the end of the month of September the pots are all brought into their winter quarters, the frame, and placed there upon coal-ashes so as to be near the glass. Whilst in the frame I give them all the air that can be given them, taking even the whole of the pots very often entirely out of the frame, and then every part of the place is searched for slugs, and the pots too are searched both in taking in and out.

This taking in and out seems to do the plants much good besides aiding cleanliness. Decayed leaves are at all times looked after and removed.

There is no place suits the Violet so well as the cold frame, but they should be well protected in frosty weather. I have, ere now, had them covered up for ten days or a fortnight at a time in severe frosty weather. There is nothing like being on the right side of a frost. One had better cover up a little more than is necessary than not enough; it is only the pleasure of doing it, for "trouble" is a word not in *The Cottage Gardeners' Dictionary*.

Two pots of these double, freely-blooming kinds, are always more productive than twice the number of either of the singles, and any lady esteeming a bouquet will prefer a good double flower to a single one.

The present time is good for planting out Violets. I have planted out the first week of this May, and although I have mostly been a week earlier, it is all in good time.—T. WEAVER, *Gardener to the Warden of Winchester College.*

POULTRY-YARD REPORT.

HAVING observed in *THE COTTAGE GARDENER* that some persons would like to see the returns of poultry-yards, and having been very particular in collecting all eggs myself, and keeping a daily account, I send you the result for the last four months, for publication in your valuable work, should you think it worth inserting.

All my fowls are chickens of last year; twelve are *Cochin-China*, the rest are half-bred and common fowls. The common fowls did not begin to lay till they were more than nine months old, though early hatched; but the others commenced before they were six months old, and I have many now sitting the second time this year, and two with their second broods; these have, in three weeks after hatching, commenced laying again, but do not leave their chickens till within a short time of their wanting to sit. The greater part of these were only nine months old on the 27th of April, yet many of them have laid upwards of 100 eggs this year, and one laid 93 without missing a day. I cannot be mistaken, as she laid separately, and a much darker egg than the others.

I consider greaves bad for grown-up fowls, and I should say, from the experience I have had, that they ruin the fowls in a very short time, besides producing a large number of soft eggs. A small quantity of meat is all very well as medicine, and any scraps from your own table given to chickens improves them wonderfully. Greaves are good for young ducks, but worms are better.

My food for twenty-nine fowls, five ducks, and twenty

pigeons, during the months of March, was, each day—one quartern of barley (or dross wheat), at 8 A.M.; three pounds of rice (boiled), two quarterns of grains, and one quartern of ls. pollard, all mixed together and given in the afternoon, the cost for which is something under eight-pence. They also got two good-sized Mangold Wurtzel roots cut up into small squares. I reckon a duck or fowl to cost sixpence a month. Now the days are longer they are fed three times a day, but much in the same proportion, with the exception of the Mangold Wurtzel, which I do not think they require at this season.

My hen-house is at the back of my kitchen fireplace, and is about nine feet by five feet, built partly of brick, one end being wood.

I had a crowing hen all last year, but she laid as many eggs as any of the others.

I have twice, during the past year, performed, with perfect success, the operation for “crop-bound,” exactly as described in *THE COTTAGE GARDENER*, at page 48, having found out how to perform it from a work on “Domestic Animals,” published in the New Library of Useful Knowledge, by Cradock and Co.

In all works upon ducks, the time of incubation is laid down at thirty days; I, however, find that it never exceeds twenty-six days, and some have hatched in twenty-five.

My chickens have all done well since following the advice you gave me at page 452 of *THE COTTAGE GARDENER*.

1853.	Number of Hens.	Number of Ducks.	Eggs.		Hens & Ducks eat in the month.	Chickens.		Ducks.	
			Hens.	Ducks.		Hatched.	Died.	Hatched.	Died.
January ..	24	4	268	56	5 hens	8	8	—	—
February ..	22	4	264	64	2 ditto	32	13	8	3
March ...	26	4	302	98	10 ditto	8	13	8	1
April	26	4	237	111	8 ditto 2 ducks	21	7	29	2

Three cocks and one drake not included in the above. The large number of hens sitting during the four months must be taken into consideration in calculating the average number of eggs laid. During the severe cold not an egg hatched; all the chickens died in the shell at half maturity.—S. P.

[We wish many of our friends would send us similar reports. Such records of facts are most valuable. We cannot have too many.—ED. C. G.]

WHAT SHALL I DO WITH THE CABBAGE-STALKS?

THERE is a best way to do everything—even to get rid of a Cabbage-stalk. The best way to deal with the old stems of the Cabbageworts, as they are taken up from the various quarters when done with, is to collect them together, and chop them up into short pieces; the shorter the better. Then anything may be done with them. They may be thrown into the pigstye, if convenient, or they will do to mix with the hotbed manure, or to be placed all at the bottom of a hotbed. Indeed, they really become manageable and useful after being chopped up like chaff, as it were. This is our method of dealing with these long, hard, woody stems, which are usually in the way otherwise. It is true, they are often placed at the bottom of hotbeds, where they are out of sight for a time, but it often happens when the hotbed comes to be broken up again, there are “those Cabbage stalks,” not half rotten, and one can neither shovel them up into the barrow, nor chop them through with the spade, to move them that way. “Confound those Cabbage-stalks!” Every one must be picked up with the hand. Then they are sometimes thrown at whole length into the pigstye, but they will not rot there; and then is heard again, “Confound those Cabbage-stalks!” what a nasty job it is to throw them out again, in particular if the stye be not a specimen of neatness. Then they are wheeled on to the

dung-heap, but the dung is soon wanted in the garden, and long before the stems are half decayed, and again confusion is wished to the Cabbage-stalks, for they have to be hand-picked out of the dung again; at least, a tidy workman will do so, though a slovenly person will manage to put them in the barrow with the manure rather than soil his fingers, and though even if he should fear he should have to dig the ground on which the manure is placed. If he has to dig the ground, or even to hoe it, “Confound those Cabbage-stalks!” will again and again be heard.

Some of the industrious cottagers who happen to keep a pig, will strip off all the leaves for their pigs, and lay out the stems to dry for the fire; this is very well in its place; but to whatever purpose these stick-like stems may be applied in the garden, the best way is to chop them up into short pieces as soon as they are pulled up, when they will occupy so much less space, and will soon decay, whether dug into the ground, or consigned either to the hotbed or the dunghill.—T. WEAVER.

CROSS BETWEEN THE SHANGHAE AND SPANISH FOWL.

HAVING noticed a communication from one of your correspondents, “A. S. W.,” in the December number of *THE COTTAGE GARDENER*, in reference to crossing Shanghae and Spanish fowls, I am induced to relate my experience in a similar experiment.

I last year crossed a Partridge-coloured Shanghae cock with two Spanish hens, and reared about a score of chickens, three only of which I selected to keep (all pullets), one quite black, the other two black, slightly spangled round the throat. They were hatched in June, and are exceedingly fine hens. They commenced laying in December, and continued till March. Two of them hatched chickens in April, and I gave both broods to one hen; the other hen commenced laying again in *twelve days*, and still continues daily; the third hen is now sitting, and I expect her to hatch in a few days. Their good qualities (not a few) are—very fine fowls, good layers, sitters, and mothers, and very quiet, their eggs between a Shanghae and Spanish, both in colour and size, and quite as numerous as the former.

I am this year crossing these hens with a black Spanish cock, and have no doubt the result will prove satisfactory.—COCHIN-SPANISH.

BRITISH CAGE BIRDS.

THE REDWING.

TURDUS ILIACUS. MERULA ILIACUS.

Synonymes.—The Nightingale of Norway; Wind Thrush; Red-sided Thrush; Swinepipe.

THIS is another of our winter migratory birds, in appearance much like the Song Thrush, but distinguished particularly by a white mark over the eyes, and the deep red colour of the feathers under the wings. This bird is readily kept in confinement, but requires being fed at first on worms, snails, and insects; it will, however, feed on berries also, but not so readily as the Fieldfare. Although I have kept them several years, they have never shown any desire to breed with me. Why it should have the appellation of “Nightingale of Norway,” I cannot imagine, for its song, if song it can be called, is one continuous jarring note, without any variation, which it will keep up for the hour together; and when my birds generally have been in full song, the Redwing's note was easily distinguishable, and resembled, to my mind, the tuneful notes of a street *Hurdy-gurdy*. Nevertheless, in a collection of birds he makes a pleasing variety, and lives very well on the oatmeal paste.—W. RAYNER.

[It seems, that though in confinement the Redwing is not melodious, yet it is otherwise when in a state of nature in more northern latitudes. Mr. Macgillivray says, “In fine weather, while perched on the trees, they often sing in a

very pleasing manner, with a subdued voice; but I believe they never sing with us so as to exert their whole vocal powers. Mr. Hewetson states, that in the course of his journey in Norway, the Redwing was but seldom seen, and then perched on the summit of one of the highest trees, pouring forth its delightfully wild note. It is called the Nightingale of Norway, and well it deserves the name."]

BREEDING PURE CHICKENS.

FROM some things that happened during the breeding season of last year, I was disposed to think your correspondent, "B. P. B.," "careful overmuch," in his note on "*pure bred chickens*," in THE COTTAGE GARDENER of the 27th of January last; and the trials I have made since then, go to prove that he had a *great excess* of caution, a thing certainly more frequently attributed to the *canny* Scot than to John Bull. My impressions, on reading the note referred to, differed materially from it. Yet I did not wish to give publicity to a *mere impression*; but having now put the matter to the test, in two different instances, I think it right to send you the results, to prevent many of your correspondents from losing their eggs during the breeding season. They are as follows; and they and you can try, and judge for yourselves. In the first instance, I had a Cochin hen going with a Polish (black, with white topknot) cock; the birds from that cross were dark-coloured, and appear to have *all* taken the colour of the sire. I removed the hen (laying at the time) to a cock of her own kind, and took the *fifth* egg laid, *after removal*, and the production of that egg is as different as possible from the bird produced from the last egg, laid previous to removal from the Polish cock; in fact, the one is a *cross*, and the other a pure Cochin; and in the second instance the circumstances were very similar to the first. I had two Hamburgs (Bolton Greys) going with a Spanish cock, the crosses in this instance were also all dark-coloured. I separated one of the hens, and put her beside a cock of her own kind, and took the *fourth* egg laid, after the separation, and the production of that egg, and the subsequent dozen (those of them that hatched), are light-coloured, and I cannot distinguish the chick from the fourth, from that of the fifteenth egg (two of the eggs were broken previous to sitting) laid after separation, and I hesitate not to say they are all pure Hamburgs; indeed, I have no doubt of the fact; and facts are stubborn things.

It is curious, that in each of the crosses, the chickens (amounting to fifteen in number) have *all* taken the colour of the male birds. I have no doubt, however, as they advance, and get feathered, their appearance will be very much modified by some of the colours and characteristics of the female. If an opportunity occurs again this season, I will next try the *third* egg, and it would not surprise me, if *it* also would be from the male the hen is with.

I have not yet tried how long a hen will lay fertile eggs *when not put* to another cock. It is stated of the Turkey hen, that a short time with the male is sufficient to fertilise the whole of the eggs laid previous to hatching, but for the truth of which I cannot vouch, never having kept them.—A. S. W.

[We shall be obliged by a report of your further experiments. All such answers from nature are interesting and valuable.—ED. C. G.]

DRIVING BEES.

I see everywhere the advantage of 'driving' over 'burning' Bees dilated on. I proved the advantage last autumn in *one* case, but in several instances of observing the practice, during the summer, in joining casts and colts (for some of my hives would swarm) to first swarms, I almost invariably found the ground in front of, and around the hives, strewed with considerable numbers of dead bees. Last Saturday evening, April 30, I endeavoured to drive the bees of a hive that I saw were doing nothing, to ascertain the state of the hive. I proceeded in the regular way, having an empty hive

to fit close, string, sticks, &c., everything correct, according to the "Country Curate's" mode. After rapping for a considerable time, we took off the top hive; not a bee in it, the bees being clustered about the lower edges of the comb of the reversed hive; we set it on again, with cloth, &c., and to work I went rapping and hitting this time fiercely. "Now it's all right," we said; for we heard the noise of the bees in the upper hive; presently we took it off, and only a portion of the bees were in it, spread round the sides. I then took my knives and cut out two of the combs, and observing no trace of grubs, young bees, or eggs, or honey (I had been feeding the hive for some time), I determined, of course, on its destruction, and the brimstone-pit soon put an end to its remaining occupants. I may observe, that *every* cell was empty; there were more than a *dozen* queen cells, perfect or imperfect, in the hive. The bees in the empty hive I then proceeded to join to another hive, knocking them out on the cloth, and acting according to directions, we set them up on the stool as soon as the business was completed, and went to bed. The next day (Sunday) the working of the hive was suspended for the amusement of fighting, and scores of the bees lay dead in front and about the hive. "We did more harm than good," said a man to me, whom I am endeavouring to instruct in the depriving and driving system; and I doubt but we did; and so last night I burnt a lot of bees who had no queen, and I have *three* more must go the same way, I fear.

Now what I want to know is, how to render driving certainly useful, and to avoid the slaying, and fighting, and slaughtering, I allude to.—CLERICUS, *Beds.*

OPENING THE CROP OF FOWLS.

REFERRING to an extract of a letter that appeared in THE COTTAGE GARDENER of the 14th of April (p. 23), from "M. B." respecting a "Diseased Hamburg Hen," I quite agree with Mr. Tegetmeier, when he says, "It is impossible to determine the nature of a malady from so short a description of symptoms." There are, however, other ways of accounting for the bird "vomiting a whitish fluid," than by the digestive organs being diseased. Fowls, after eating hearty of any oily substance, will often vomit; but by the hen "moping, with her eyes shut," and generally inactive, induces me to think that the bird is crop-bound, which, if the castor oil does not remove, the crop must be cut open, the contents carefully removed, and then the lip of the wound sewn together with silk. The method of performing this operation will be best described by the following note that I wrote some time since, and which appeared in "Kidd's Own Journal."

"Many thanks for your kind advice, so freely given me in a former Journal, as to how I ought to treat one of my fowls—a Shanghae cock. You recommended, amongst other things, change of air, diet, and exercise. Well, what with your advice, my skill, or luck, which you will, I have succeeded in restoring the poor bird to *perfect* health; and for the benefit of that portion of your readers who keep valuable poultry, and may, perhaps, some time or other be in a similar 'fix,' I send you my mode of operations. Let me first state the symptoms of illness the bird exhibited: these were, loss of appetite, dung of a dark green colour, ruffled feathers, comb and wattles on the edges turning blue, forsaking the company of the hens. These being the symptoms, I consulted thereon with my neighbours who keep poultry. Some said the invalid had got the pip; others that he had swallowed poison; and several of the '*oldest inhabitants*,' by way of consolation, told me the bird was sure to die in a day or two. It is said, that 'in a multitude of counsellors there is wisdom.' Not so, however, in this case; for all the advice I obtained only puzzled, confused, and made matters worse; until the thought struck me that the bird might have swallowed something indigestible. But how to arrive at the solution of the mystery? After a few words with myself (and when a man talks to himself it is generally to the point), I made up my mind to imprison, and keep the bird without food for twenty-four hours. I then visited him, and felt the crop of the now hungry bird. Guess my surprise

to find that the crop was as much distended as it was twenty-four hours before! 'A desperate disease requires a desperate remedy.' I therefore at once plucked the feathers off from the inflamed crop, and carefully cut the same open with a pair of sharp-pointed scissors. The cause for the illness of the bird now became apparent; the half-putrid corn, &c., quickly protruded through the opening; then, with the handle of a teaspoon, I brought forth two large pieces of bone, which the poor bird must have swallowed, but could not digest. After washing out the crop, the lips of the wound were sewed together with silk: so that, instead of dying, Chanticleer yet lives to 'crow the tale,' I hope for the future benefit of others of his tribe." W. L. J.

THE SHANGHAE AS A COTTAGER'S FOWL.

(Continued from page 91.)

In my first letter I promised to let your readers know how I got across the water that I was then venturing into. I will now fulfil my promise. I have informed them that I had hard work to obtain my first pair of poultry, but I rested not till I had them. They were very small, only weighing 3½ lbs. the two; but this was a fault that I soon found them to escape from, for they gained 4 ounces each every week, until they were 4 lbs. each. I then left off weighing them, for they proved to be two hens! So I took them to my neighbours that I told you of in my first letter, who had a cock of the same sort; but I have since bought a cockerel of the same gentleman that I bought my hens of, being one that he bought at one of the sales in London. This saved me from breeding in-and-in. So, now, you see, I am well set up.

Now, I only tell you all this, on purpose to show you what may be done, if you will only persevere. I will now give you my opinion of the Shanghae fowl. They are *not* large eaters when they have as much as they will eat; but it is not the best way of feeding them to give them as much as they will eat, and I will give you a proof of this, for I made my two live upon twopence-halfpenny per week, and the same week that my two weighed 7 lbs., the two best pullets of the same hatch only weighed 6 lbs., although they had had as much as they could eat. They are capital layers. Mine began as soon as they were six months old, and laid every day; and although they have neither of them laid two eggs in one day, yet one has laid two eggs in one night.

But the very best of all their qualities is their tameness, and keeping within bounds. If they had no other good quality, this is enough to recommend them to every cottager in England. If any one were only to see the fence that keeps mine within bounds, it would be plenty of proof on this point.

Now I took it into my head that they were so tame that I could do anything with them, so as I had plenty of eggs, and wanted some of them turned into chickens, I thought I would try and teach one of them to sit, so as they roosted in the same nests where they laid, I had nothing to do but to place half-a-dozen eggs for the hen to roost upon, and she was so kind as not to let them become cold again. As a proof that she was not ready to sit, she laid for *three* days after she took to her nest.

Now, as to the best food to feed them with, I find there is nothing that will fatten them so fast as barley meal and bran mixed together, and made wet, but not too wet; but when they begin to lay, I have given mine nothing but barley, as that was the practice of my old Aunt, and as mine lay every day, I think I shall not depart from this practice.

I can, with confidence, recommend the Shanghae to every cottager who would like to keep fowls, but who cannot keep the common sorts out of mischief. Those who have a good turn-out for fowls can keep what sort they like; but I think the Shanghaes will not be beaten this next year or two.

THE POOR MAN'S WELL-WISHER.

OUR MONTHLY CONTEMPORARIES.

RHUBARB.—By Mr. James Cuthill, of Camberwell, in *The Scottish Florist* for May:—

"Rhubarb, like steam, has worked its way, and upon its own merits. It is not only used and esteemed for tarts, puddings, and pies, but is the very king of preserves: with about a pound of sugar to a pound of fruit-stalk, and well boiled—the boiling is absolutely necessary on account of the watery nature of the stalks—with the addition of a little ginger and lemon, or any of the three marmalades, it makes one of the finest of all preserves, not excepting the Green Gage Plum. The first of this preserve I ever saw was made by Mrs. Randall, a market-gardener's wife, the preserve being made from the sort bearing her name; and in my opinion this Rhubarb is as far before all the others as a Ribston Pippin is before a Hawthornden Apple. Rhubarb also makes a capital wine with about three pounds of sugar to a gallon of liquor. The fruit-stalks are first well bruised, then a little water added along with the sugar; it is then strained off and put into the casks. It ferments briskly for a fortnight or so. Rhubarb for wine purposes must not be gathered before August; the root by that time has done growing, the stem then gets all the benefit of the condensed and elaborated sap, being much more strong in acidity, and containing much less water. This wine is much more wholesome than Gooseberry wine; it effervesces like the best champagne. The colour of the wine, like the preserve, can be made according to fancy—for instance, a little brandy would colour it and improve its quality. Mr. Oldacre, late gardener to the late Sir Joseph Banks, was the first to introduce the then best variety, which he brought home from St. Petersburg, having been gardener to the Emperor of Russia for some years.

"Our market-gardeners round London have had such mild winters lately, that they have forced it by simply digging out a trench five feet wide, and a hundred yards long or more. Then in the bottom of the trench is put two feet of hot dung, then a little mould just to cover the dung; the roots are then packed side by side closely, then six or eight inches of straw on the heads, or hurdles thrown across the bed, and then covered with straw; but if Rhubarb is wanted in a safer and more early way, they grow it in frames and hooped beds as is done with Sea-kale, Asparagus, &c. This winter, Rhubarb was fetching a higher price than usual, on account of the frost on February 25th; it was selling at 15s. per doz. of bunches, and some even higher. The earliest and best that came to London this winter was from Scotland, to Mr. Solomons, which I was too proud to hear of. Rhubarb stalks are highly recommended by doctors, knowing, as they do, that it is a fine purifier of the blood, and it may be named either in the Turkey dried root, or the English grown stalk, nature's medicine. Although the London growers grumble at the low price of their Rhubarb, it is not half so cheap as it ought to be to enable all classes to obtain it in the winter.

"Some years ago I proposed a plan so as to produce it all the winter through and at a cheap rate, which I shall give below. I also recommended a plan of covering the heads with a forkful of straw to be placed on each head in the open ground, which is now being universally adopted. This mode brings it up early, saves it from the frost, it also slightly blanches it, and hence the skin is not so thick, the flavour is also good, as the straw admits plenty of air. And lastly, the straw being spread over the frame preserves it in a moist state and keeps down weeds, &c. As for sorts, first is Randall's Prolific; this, in my opinion, is not only the earliest, but also is a fine bearer, with a beautiful coloured pink stem rising quite erect, and, unlike many of the others, the flower-stem comes up much later; next, Myatt's Linnæus; and for the latest the Victoria. Some market gardeners leave the flower-stem until all the leaves are picked. This is but quite right, as it keeps the roots in growth until a fresh supply of leaves are produced. The plan which I proposed some years ago for Cornwall and Devonshire is now not only being carried out with Rhubarb, but also with early Potatoes, Sea-Kale, and Asparagus, Broccoli, Peas, &c.

"I may here mention, that between the frost of February and that of March this year there was some very warm weather which brought on the Rhubarb very fast; all those

who had no straw on the crowns had their stalks destroyed entirely.

"My plan is to form large plantations of Rhubarb along the sides of some railway in Cornwall or Devon, and, as in the case of Sea-Kale and Asparagus, if practicable, ground should be chosen for it that slopes to the south, for this will make a difference of at least ten days in its earliness. When the land has been selected, dung it heavily, and trench it at least two spits deep. This should be done before the heavy rains of winter set in. Soil of too stiff or too clayey a nature must be avoided, for that would make a difference in the earliness. For the same reason wet land should not be selected, for that is at all times 5° colder than well drained land: besides, the latter offers facilities for air reaching the roots which wet land does not, and without air, the roots cannot thrive any more than the tops can.

"Before making the permanent plantation, it would be well if a large number of the best sorts were previously planted out thickly in a piece of ground, and coming forward; these might be divided and increased with advantage, leaving a bud on each division. This will multiply your stock amazingly, and lessen your outlay for plants. Mr. Myatt plants four feet square, but that is quite a foot too wide for field culture, if no other intermediate crop is intended. The plants ought to be put in alternately, or quincunx fashion, which gives them more air, and the roots fair play. In the first year something dwarf might be sown between the rows, as turnips, for instance. Next year the Rhubarb plants will afford a fair picking, and in doing this some leave nothing but the flower-stems to draw up the sap, until the last pulling takes place, and then the flower-stems are removed; but Mr. Myatt makes it a rule never to pull every stalk off, for that injures the root. It is quite certain that leaves and flower-stems are, in a great measure, formed out of the matter that was stored up in the roots the previous year; and if we cut them off without allowing them to restore to the root that which they have taken from it, we shall have a weaker growth the following year. It is on this principle that the leaves of Crocuses and Snowdrops are never removed by good gardeners till they have fulfilled their office, and become withered; for if they were, the result would, in all probability, be no flower next year. Rhubarb roots should, therefore, never be perfectly denuded of foliage.

"I mentioned to a London market-gardener one day, that I was of opinion that Cornwall and Devon would ultimately be found to be the great marts for our early Rhubarb. His reply was, 'We can beat them hollow.' 'That's well,' said I; 'for the whole of the north of England, and Scotland too, are ready to receive not only early Rhubarb, but every thing else. At the present time (April 25th) there are many tons being sent northwards daily. There is no fear, therefore, of glutting the market.' The Cornwall and Devonshire growers might easily have forced Rhubarb all the winter, by making trenches five feet broad, and one or two hundred yards long, taking up the roots and packing them in the trench, and putting mould upon them. Hurdles covered with straw might be placed over all. Nothing more would be needed, but of course it would require immense quantities of roots to replace those that were forced, which should not be thrown away, but cut into eyes and planted again. In order, however, to save the roots where they stand, and still get them earlier, they must be covered with pots, which must be made for the purpose, not less than 18 inches high and a foot in diameter. They should have no hole at the top, as that would not only let out the heated air generated in the inside by the sun's rays, but would cause the interior to be colder than the external atmosphere. To avoid the expense of pots, covering the crowns with plenty of straw is a good plan to protect it, the straw would afterwards act as a manure to the ground. Many persons prefer Rhubarb grown in a half-blanching form, they think it more delicate in flavour: one thing is certain, that it does not form so large leaves, and would be easier packed. The mild climate of Cornwall and Devon would, however, without any artificial treatment, produce Rhubarb fit for use at least five or six weeks before it could be brought to market from anywhere else, and instead of having five or six weeks' cheap Rhubarb, as we now have, we should then have a two or three months' excellent supply.

It is now (March 10) selling at 1s. a bunch of from twelve to eighteen heads, which, trifling as it may appear, is such a price that the middle and industrial classes cannot pay.

"Ireland, which has the finest land and climate in the world, and which has railways passing from its south to its north, possesses extraordinary capabilities for producing everything in first-rate style. The south could supply the north with early produce; the north again could supply the south with late produce, and in this way a long continuance of good and cheap things would be the result. But when shall these things be? When shall that unhappy portion of the British dominions care for its own and its neighbour's interest? Let us hope that it soon will, that the dark cloud which at present hangs over it will pass rapidly away, and ere long fair 'Erin' will put on a more industrious and smiling face."

APHELEXIS CULTURE.—By Mr. William Barnes, of Camden Nursery, Camberwell, in *The Florist* for May:—

"This beautiful and justly much admired genus has for many years formed one of the greatest ornaments in the splendid collections of plants that have annually graced the tents of our great metropolitan exhibitions; a few practical hints, therefore, respecting its cultivation, which I have conducted successfully for many years, may not be uninteresting. I will commence with its propagation, which is considered by many rather a difficult task, but having raised some hundreds of them by the following process, I venture to assert, that by strictly pursuing my plan, no one will be disappointed in the attempt. I would choose the month of June for the purpose: in selecting cuttings, make choice of good strong ripe wood, three or four inches long, if such can be obtained; and if there are three or four side-shoots to the cuttings all the better, as in that way nice dwarf bushy plants will be formed at once. In taking off cuttings, instead of removing them with a knife, break them out down to the joint, with a shoulder or heel to them, and just pruning off the loose bark with a knife, is all that is required. Prepare some 5-inch pots by well draining them, and filling them nearly full with light peat and sharp sand in equal proportion; on this place half-an-inch of clean sharp sand, press all down close, and place your cuttings round the edge of the pot, pressing them in tightly. When finished, select a shady place out-of-doors under a north wall for them. Take out a trench about nine inches deep; place in the bottom of it three inches of coal-ashes, for the purpose of keeping down worms, and on this plunge your pots to their rims, filling up between them with ashes. When this is done, put a sound hand-glass over them, pressing it down firmly on the ashes to seclude all air from entering. They may then be left three or four days, when they may receive a slight sprinkling of water. Put the glass carefully on them again, when there will be but little to attend to until they are rooted, except looking to them occasionally, in order to see that they do not get dry, or that damp does not accumulate.

"In August they will be ready for potting, which should be done as soon as they are rooted, in order to get well-established, nice, bushy plants before winter. When potting, use the same compost as is recommended for the bottom of the cutting plants, and pot them into 3-inch pots. Set them in a close cold frame, and shade them from the hot sun. In a fortnight they will be sufficiently established to permit of the operation of topping being performed, which should be done to every shoot; this will ensure your getting them short and bushy, and a proper foundation will be laid for a fine specimen.

"When the season arrives for placing them in their winter quarters, make choice of a nice dry, airy shelf in the greenhouse for them, as close to the glass as can be obtained, where they may remain until the following April; they will then require shifting into larger pots, using the compost rather coarser and with less sand in it than before, and mixing some small pieces of charcoal or broken potsherds with it, which prevent the soil from becoming soddened and unhealthy. Keep them either in a cold pit or frame, and see that they are constantly topped, which will be found to give them more strength and vigour; they will require another fresh potting about the middle of June, which should be their final one for that season. When properly established, after this time of shifting, begin to

expose them to more sun and air, until they may eventually be placed out in the open ground, making choice of a partially shaded situation for them, free from all drip of trees, and where they may remain until housing time arrives, when they should be replaced in the greenhouse as before recommended, paying great attention not to give them an over supply of water during the winter. As spring advances attend to potting them as they may require it; and should the plants not be wanted to bloom in a small state, they may again be regularly topped as before directed. By following the practice I have just described, and attending to shifting them as they increase in growth, in two years you will be in possession of some nice bushy plants. Should this, however, be too long to wait, young plants may always be purchased at the principal nurseries, taking care to choose nice dwarf bushy ones in preference to those having long weak wood, and by following up the principle of potting and topping, you will ensure a specimen in much less time than you could from cuttings.

"My object in giving the full particulars of the most successful mode of propagating them, is to show that there is not that difficulty in the operation that many suppose there is. It may here be observed that as the plant advances in growth, the soil should be used in a coarser or rougher state, always employing sharp sand rather liberally with it, and increasing the size of the pieces of charcoal or potsherd, mixed with the compost, and when they receive their final shift, say into 15-inch pots, pieces as large as hens' eggs may be introduced, pressing them firmly into the soil as you pot. This will be found of the greatest possible advantage; it will promote in many ways the well-doing of the plant, as, for instance, in keeping the soil open and porous, kind and healthy, and in giving the roots full scope for extending themselves through the ball of earth, without coming in contact with soil that has become, by constant watering, soddened and unhealthy.

"As the above mode of treatment may be applied to all the varieties of this genus, I will here add the names of those that are the best and most beautiful, viz. *Macrantha purpurea*, *Macrantha rosea*, *Humilis*, and *Sesauoides*."

EFFECTS OF FROST ON SEVERAL NEW TREES AND SHRUBS, from *The Midland Florist* for May.—"It must be premised, that the soil near Nottingham is a strong and retentive loam. First, then, the *Cryptomeria Japonica*. Ours is a beautiful plant, ten feet high. Some years ago, it lost its leader by the frost, since which, it has formed a fresh one, and though the points of the laterals are slightly 'scorched,' the leader has escaped. Many people complain of the yellow tinge of the foliage of this fine tree, but ours is an exception, being a lively green. We may consider this tree hardy. The *Cerasus ilicifolia*, with its holly-like leaves, has suffered in the foliage, and is considerably disfigured, though the wood appears unhurt. *Ligustrum ovalifolia* (Siebold) appears as hardy as the common privet; and the beautiful *Japan privet* equally so. This last is a splendid evergreen. But *Thuja Chilonensis* has given us the greatest satisfaction. Our small plant has stood on an exposed border, without any covering or protection, no hedge being near it, and its delicate golden-looking foliage has withstood wind and frost, in fact, all the inclemencies of winter with a hardihood scarcely to be expected from its appearance. We anticipate that this plant will be highly appreciated. We wish we could say as much for *Cupressus macrocarpa*, a large plant, fifteen feet high, which has its foliage lamentably disfigured; still the interior of plant is green, and as it has previously recovered its good looks, we yet anticipate a renovation. A plant of *Ceanothus thyrsiflorus*, twelve feet high, which forms a perfect pyramid of blue flowers, in the summer season, has suffered a good deal, the points of the branches being killed; but from the exposed situation in which it stands, we are surprised it has not been more injured. The beautiful *Quercus lanata* has its foliage slightly injured. This is a splendid oak indeed. We had our misgiving as to its being sufficiently hardy to bear our winters, and are therefore much pleased to find it so robust. *Pinus radiata* has the points of the shoots browned; but *P. macrocarpa*, *Sabiniæ*, *Douglasii*, and *Benthamiæ*, appear as hardy as so many Scotch firs. *Quercus ilex variegata* has got slightly injured, while the common variety, as a matter of course, has escaped, proving that the constitution of the plant has been weakened

by its variegation. *Escallonia macrantha* has lost its leaves, but is putting out strong again. This, we anticipate, will make a very desirable shrub. *Garreya macrophylla* has stood better this season than some previous ones, the points of the shoots only suffering, from not getting sufficiently ripened in the autumn. As for *Moutans*, or *Tree Pæonies*, their flowers are taken. What a pity it is that some late-blooming varieties of this noble plant are not originated from seed. We have *Daphne mezereum autumnale* with other plants of a similar character, and there is no reason that we know of why such a plant might not be obtained by perseverance. It would be a little fortune for the fortunate raiser. A northern aspect, and protection, are now the only means of obtaining blooms, in a spring like the one past. *Tiburnum macrocephalum*, a small plant, in a low situation, is killed to the ground. The pretty *Ceanothus rigidus* has also suffered on a light border, whilst on stronger soil it has escaped. Our readers will observe, that amongst trees and shrubs, the situation has considerable effect on their respective hardihood. The lawn plant which has passed the summer in a dry exposed situation, will have ripened its wood better, and consequently be better able to withstand severe frost, than if it had grown in a low sheltered locality."

CULTIVATION OF PHLOX DRUMMONDII, from *The Midland Florist* for May.—"I am not going to fill several pages with what may be compressed into half of one; but I really love this beautiful Phlox, and it is so brilliant, so easy of cultivation, and such a first-rate bedding plant, that I might even be induced to do such a thing. The way in which I have been most successful is to raise the seedlings in spring, in pots, filled with loam, vegetable soil, and a good dose of white or Calais sand, the pots being placed in a warm part of my greenhouse. As soon as the plants can be handled, they are pricked out, four in a pot, and again placed in the frame. When large enough, say by the beginning of May, I turn them out on well prepared beds. After a time, I pinch out the leading shoots, to induce a bushy habit, and am rewarded by an abundant bloom. If I have any among the seedlings particularly attractive, I strike cuttings, pot them off, get them well established before winter, and keep them secure from frost till next spring. Now, were I to write for an hour longer, I could not give you better directions, and I trust your readers will appreciate my motives."

HENRY JAMES.

TO CORRESPONDENTS.

* * We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

THE POULTRY BOOK.—The wood-cut at page 71 was a mistake of the engravers; the two absurdly placed birds' heads were in the original drawing merely the filaments that retain the yolk in its proper position. However, in the next number of the "*The Poultry Book*," the means of correcting the blunder will be furnished to each subscriber.

MARRIOTT'S BEE-HIVES (*Ellen M.*).—We have not a word to say against your not employing these. Indeed, his "*New Cottage Bee Hive*" embraces all the best improvements whereby honey may be taken without destroying the bees; with windows on opposite sides, so that the progress of their work may be examined. It is of straw, with a wooden flat-top, bell-glasses to obtain early supplies of honey, &c.

CLOCHES.—We have been desirous, for some time past, to meet the wishes of the public in regard to the supplying of "cloches;" and Messrs. Hartley are equally anxious to afford every facility. Two difficulties, however, present themselves; first, the cost of package, next the expense of carriage. The "cloches" being of one large size only (say sixteen or eighteen inches in diameter), it becomes necessary to have a very large package, which, in addition to the carriage, makes it more costly than the contents. We would suggest, that various sizes be nested within each other. If this would answer the requirements of the public, we could pack a greater number in a case, and the expense of transmission would be considerably reduced. We shall be happy to receive

any suggestion from your correspondents, and we will do all we can, in conjunction with the manufacturer, to meet their wishes.—*James Phillips and Co., 116, Bishopsgate Street Without.*

BEDDING PLANTS (*Florum amator*).—You cannot keep them in your summer-house except more light be admitted.

BEE FLOWER (*S. R. W.*).—It has been said that the flowers of the *Dahlia* intoxicate, and even kill the bees which partake of their honey. We cannot say that we are convinced of the fact; and we are quite sure that the two other flowers you mention—the *Sunflower* and the *Hollyhock*—are in no way injurious to bees.

BLACK SHANGHAES (*A Subscriber, Bridgenorth*).—These are usually of a dead black colour, but we have seen some with the metallic lustre on their plumage, which certainly adds to their beauty.

SKELETONS OF LEAVES, &c. (*T. H. L.*).—The more particular mention alluded to at page 38 is given at page 40. We fear that Mr. Beaton does not know any more than we do, how the anatomizing is effected. Can any of our readers inform us?

FOWL FEATHERLESS (*Nero*).—We cannot suggest a remedy for your "Spanish fowl that has lost all its feathers," unless we knew *how* the loss occurred. Your tyrant namesake might have plucked them off, as the *Neros* in Lincolnshire still treat their geese; your fowl may be moulting; or it may have a diseased skin. If the latter be the case, give it a Plummer's Pill daily for a week, and keep it upon soft vegetable food until you see the feathers returning.

DORKING FOWLS (*A. E. L.*).—For all the particulars you require, you must consult the forthcoming *third* number of "The Poultry Book." There are several varieties, all of which will be there described; but which variety you require you do not state.

FUCHSIA CULTURE (*J. Fletcher*).—Our observation merely referred to the Essay to which it was attached.

ORNAMENTAL FOUNTAINS (*A. B.*).—We cannot recommend tradesmen. Those who make such garden structures should advertise them in our columns.

CONCRETE WALKS AND ROADS (*J. T.*).—We can answer for it that those made by Mr. Beaton, at Shrubland Park, near Ipswich, were the best walks we ever saw. They were firm, level, and uninjured by the heaviest rains. So solid were they, that tons of stone were dragged over them during Sir C. Barry's alterations of the mansion; and yet the surface was uncut by either the horses' shoes, or by the waggon-wheels. Then, again, they afford no soil for weeds.

EGG-EATING HENS.—*Scrutator* says:—"There is an excellent remedy which I never recollect to have seen mentioned. I have found it *infallible*. Have some eggs cast, in *solid plaster of Paris*, by the Italians, and soak them in *stearine*, which makes them exceedingly hard, and scarcely distinguishable by the *master* of the fowls from real eggs. If a few of these are put into a nest, it will be found that the hen will set upon them furiously, but become very tired of the amusement in about a quarter-of-an-hour, and if, on laying her egg, she should give a peck, which is not usually the case, it is five to one (if five false eggs are in the nest) that she does not hit the right one. Persons may make their own false eggs, by filling egg-shells, but it is difficult to do so without cracking them, but if successfully made they are better than plaster alone, having a real shell." We have sent your note to Mr. Fish.

HEN LOSING FEATHERS.—"A *Lady* has a very valuable Spanish hen, which appears in perfect health, and has not ceased laying since last September, losing the feathers on the head, the skin appearing dry and scurfy underneath. The bird is kept in a confined wire-yard, in a dry, airy situation, and well fed with grain, but no meat is allowed at any time. Vegetables from the garden are given to them constantly, and they have plenty of good and clean water, and the roosting-house and yard cleaned every day." [This is evidently a case of "white comb," as this peculiar skin disease is termed in Shanghaes. I should recommend the employment of turmeric and cocoa-nut oil, as has been frequently recommended in cases of this disease (see vol. viii., page 248 and 283); recently I have had several cases under my notice, especially in fowls kept in confined situations; the turmeric and oil has always been successful in stopping its progress, but the feathers do not quickly reappear.—*W. B. TEGETMEIER, Tottenham.*] When inveterate, we find a Plummer's Pill given for five or six successive days usually effectual.—*ED. C. G.*

CINERARIAS (*P. A. M.*).—No. 1. Narrow purple tips, softening to lilac; form good; petals imbricating pretty well; notch too deep;

medium size; a second-rate flower. No. 2. Broadly purple-tipped petals; deeply notched; large and showy for borders. No. 3. Pure white; form good; no notch; probably will prove the best white we have. No. 4. Lilac-tipped petals; very deep notch; large, good border flower. No. 5. White; very deeply notched; and all other points bad.

BOTTOM HEAT (*J. Buckley*).—This can be supplied by a square wooden box, filled with hot water, heated by a small fire and boiler, for Melon growing, instead of dung-beds. There is no difficulty in the matter. See an article near the end of the second volume, and others lately by Mr. Fish, on tanks *versus* pipes. We do not understand about the *square* box. One from four to six inches deep would be deep enough; the width may be as wide as the frame, as you state, with a division in the middle, but you must either cover it with slate, or leave open spaces to be filled with chips, clinkers, or sods, to let the heat up, as wood is such a poor conductor; but without a secure conducting-of-heat covering you can scarcely let heat into the atmosphere without also letting moisture, though that will be little against Melon growing until ripening time, when much artificial heat would not be required, unless very early fruit was wanted.

GENERAL COMPOST (*Juvenis*).—A compost for greenhouse plants, such as Geraniums, Fuchsias, Verbenas, Petunias, Calceolarias, Cinerarias, and Cactus, requires the constituents mentioned in *The Cottage Gardeners' Dictionary* and *COTTAGE GARDENER*, and are what extended experience have demonstrated to be most suitable; but the *very* mixtures mentioned are not at all essential to success, and will do little to make up for the want of attention to the first principles of culture. We have repeatedly said, and have proof of it every day, that in loamy districts the soil found in heaps by the roadside, consisting of loamy matter and the ground stones and flints of the road, will grow all plants admirably, except those having hair fibres, such as Heaths. We add fibry peat to such soil when we can get it, to keep it open; but pieces of charcoal, broken pots, small pebbles, and chopped moss, we often use for a similar purpose. A great point to success is—good drainage, and one of the best promoters of that is a small quantity of green moss over the drainage; failing that, wheat-straw is also good, chopped into short pieces.

MANURE (*Ibid.*).—Two years old, for potting purposes, is better than fresher, and if dried into little firm pieces, all the better. Use it for all such things very sparingly in the soil until you come to the last shifting, and even then we prefer, for fine coloured flowers, top-dressings when the buds appear.

MANURE-WATERING (*Ibid.*).—This may be given freely as soon as the flower-buds appear, or when, as in the case of a Fuchsia, you wish it to grow strong and quick; but err on the safe side as respects strength. Two ounces of guano will do for four gallons. With such a manuring agent, and the use of the means alluded to for keeping the soil open and drainage good, you may comfortably dispense with all kinds of manure in your soil.

HEATING A SMALL STOVE WITH OIL (*Ibid.*).—We have had no experience, but would never have a stove or burner inside a plant-house if we could help it. Various modes of heating such structures have lately been alluded to.

CUTTINGS UNDER BELL-GLASSES (*Ibid.*).—If you have no heat beyond your greenhouse, you must wait longer, but you will not have so much trouble in hardening them off when struck. Never allow them to flag if syringing and shading can prevent it; and, on the other hand, give no more shading than is absolutely indispensable.

ENGINE-HOUSE GARDENING (*A Raw Un*).—You have done well in stating the temperature in the different parts, but we can form no idea of the size of the windows from the terms *large* or *small*, and yet upon their size, as well as to the freedom of noxious exhalations from the engine, success in any gardening operation must depend. You cannot grow a Tea-plant, nor any of the common greenhouse plants to which you refer, in a temperature from 70° to 80°, and from 60° to 65°, with all the air on you can command. On the stove floor, with air on at the latter temperature, you could grow mushrooms eight or nine months in the year, and by having, or obtaining, a supply of roots, you could have Sea-kale and Asparagus from November to May. By keeping it dark, plenty of blanched Chicory could also be obtained during winter. The whole Cactus tribe would do by keeping them as cool as possible during winter. Deciduous greenhouse plants, such as Fuchsias, could be kept in sheds or rooms during winter, and brought to the windows in the engine-room in March or April. Many annuals, such as Balsams, could also be well grown there, and many stove plants that rest during a part of the season, such as Gloxinia and Achimenes, would also succeed. Were there glass

enough in the part getting sun until midday, you might have a Melon or Cucumber in summer, and the latter even in winter. There is no end to the plants you might forward for your neighbours at this season, but in winter, with the exception of the Cactus, and blooming some early bulbs with the full amount of air on, we should give up *floristry* and try kitchen-gardening. A temperature of 60° would grow Mushrooms and Sea-kale first-rate. As there is no fire on Sunday, you must husband the heat in winter, by shutting up the air early on Saturday. If you give us the *size* of windows we may then revise our opinion. You must neutralise the dry air by moisture.

MORE ABOUT ENGINE-HOUSE GARDENING (A Raw Un).—We had written the above reply before your second letter came. It would be no use giving you long lists of what you could keep in such a place; you had far better confine yourself to a few groups at first. Recollect, you will grow nothing well that you cannot give light and air to. The Cactus group would answer your purpose well. You have seen those strange little things, the *Echinocacti Melocacti*; these would all do well in a temperature of 60° in winter and from that to 75° in summer. Most stove plants would do so far as temperature is concerned, but then we rather think you would not find more than room for two or three plants close to the window, and the floor will be of no use for growing tender plants, while it will be too hot for preserving greenhouse plants—it would regularly wire-draw them. Your additional room, mentioned to-day, communicating with the engine-house by a window, and having a skylight five feet by three feet, affords you more hope for growing Fuchsias, Geraniums, &c., but only then if your skylight opens, and you can place the plants on a table near it, so as to enjoy the light. The small steam-pipe passing through this room will keep it warm enough in winter, and on a Sunday the opening of the window between the engine-house and room would give plenty of heat in winter. On other days, to prevent too much heat, a board cover should be placed over the window, and the skylight elevated for air. Aim at 45° to 50° in winter, and from 55° to 65° in summer. If this room was roofed with skylights you would have a nice greenhouse. The light you get from the partition window will be of little or no benefit for your plants. For most things the light must be *direct*, not *diffused*. When you please yourself with Fuchsias and Geraniums, it will be time enough to begin with Heaths. You are mistaken about the Cactus; they like damp heat only when growing. You would see an article lately by Mr. Fish on their management, and they will be glanced at presently. Your cuttings may have the tops kept a little moist, but the soil in which the lower part is should be dryish, or you may rot them. When we used to grow Cacti largely, we used to put them down rather carelessly among a lot of sandy gravel, rather dry, and kept the tops rather moist; by this process they very soon rooted. We forgot to mention that, in addition to Mushrooms, Sea-kale, &c., you might supply (from the stove-floor of your engine-house) the whole neighbourhood with Mustard and Cress.

ROSE-SCENTED GERANIUMS (R. S. B. and S. S.).—They will only make green beds, as their flowers are not conspicuous, unless you take to the new plan of mixing strong scarlet Verbenas with them, such as Robinson's *Defiance*. Strong Verbenas, with pink or white flowers, will also do to plant with the Rose-scented Geranium, such as *Beauty Supreme* and *Ellen*, for shades of pink, and *White Perfection* or *Mont Blanc*. The time to plant them out is during the last half of May. The best apology in the world that a private correspondent can offer to public journalists is—to write to the point at once, and in as few words as possible; a single page of note paper is large enough to hold from twelve to twenty questions. Why, then, inflict four pages of close writing to convey one or two questions, and that regularly every other week? As to the scarceness or dearness of this or that plant—we are not in the trade, and can have nothing to do or say in the matter.

DIELYTRA SPECTABILIS (S. S.).—Pray do not allow this beautiful plant to be smothered with bedding plants; it is only fit for specimen plants in a mixed border, no matter who asserts the contrary.

VARIEGATED GERANIUM (E. E. H.).—Your Geranium is *Mangle's Variegated*, the best of all the bedding sort, but not the right one for the shot-silk bed. Although the flowers look *now* more scarlet than pink, as soon as they get into the open air they will turn to the usual pale pink; if they do not, pray tell us next July.

CAMELLIAS (Devoniensis).—Next week we shall give you such an instance of Camellia growing as will put "the very Paxton of North Devon," and all other Paxtons and *Devonshires* to the Camellia blush. Now is a very bad time to pot Camellias that are not in the highest health. The end of September is the best time in the year to pot Camellias, that is certain; the end of March the next best time. Unless

the soil is much injured by worms, very little of it could be shaken off from the roots; if it fall off at potting, your plants are in a very bad state indeed.

MANAGEMENT OF GOATS (P. W. H.).—The refuse of any garden will furnish food for a Goat, and it will thrive and give a good quantity of milk when fed upon oats, clover chaff, cabbage leaves, turnip tops, and any garden produce; and many weeds, such as Milk Thistles, &c., they will eat with avidity. In order to keep a Goat in milk during the greater part of the year, she should produce her young twice in that period; to effect this, she should be put to the male about six weeks after yearning. —J. B.

ARTIFICIAL MANURES FOR MANGOLD AND SWEDES (T. H. L.).—The artificial manures required to produce a full crop of Mangold-Wurtzel, when the soil and culture is favourable, will be, per acre, two hundred-weight-and-a-half of superphosphate of lime, one quarter of bone dust, mixed with twenty bushels of ashes, and drilled with the seed; and three hundred-weight of the best Peruvian guano, sown broadcast, and ploughed or harrowed in at the time of seeding. For Swedish Turnips, under the like circumstances, the same quantities of superphosphate, bone dust, and ashes should be applied with the drill; and two hundred-weight of Peruvian guano, sown broadcast and harrowed in, will prove sufficient; but on some soils Swedes do not keep well when guano is applied. —J. B.

BANTAMS (G. Crocker).—The *Sebright* is the most perfect form of the Laced Bantam, and, from the excellence of the birds bred by the late Sir John Sebright, the name has been sometimes applied to the whole class; but more correctly would the *Sebright* be termed a variety of the Laced Bantams. In the *Golden Laced* birds, the tail should be of the same clear yellow bay that forms the ground-colour of the body, the extremities of its feathers being lightly tipped with black. —W.

ROUEN DUCKS (Verax and H. H.).—Whether the Rouen Duck can lay claim to be considered as originally a distinct variety may be doubted; but, at any rate, care and selection have brought the birds now known under that name to such a degree of excellence, that no one can question the justice by which they are admitted as a separate class at our Poultry Exhibitions. The colour of the Rouen closely resembles that of the Wild Duck, and birds whose plumage show any lighter tints are always to be rejected. In size they greatly exceed the usual weight of farm-yard birds. Our own four prize birds, purchased at Birmingham in 1851, weighed 26 lbs. on recovering from a long journey, and we have seen many that would equal them in this respect. In form they are lower on the leg, and the fore part of the body is less raised. The eggs are laid abundantly, and though it is said at a later season than the Aylesbury, we have not found it so; sixty or seventy eggs for the year may be about the average of a good layer. Our own, old and young alike, have been laying since last November, and have not as yet manifested any desire to sit. The colour of the egg is a pale bluish-green. —W.

BAD-FLAVOURED BUTTER.—*Dairy-maid* says:—"I shall feel much obliged if any one could inform me what is the cause of an annual annoyance which occurs in my dairy, either in the latter part of April, or the beginning of May, continuing about a month or five weeks. This year, the season being late, I have not perceived the rank and disagreeable taste in the butter till last Monday, the 2nd inst. My dairy, which is supplied with milk by Alderney and Jersey cows, is of the richest description, making most pure and excellent butter, keeping good the ordinary time. Now I am obliged to have butter made daily, as every hour it gets more rank, and often the milk is very far from good. I am inclined to think this annoyance is occasioned by some weed peculiar to this part of Surrey, near Kingston, and should feel very much obliged by any of your correspondents, or readers, informing me what weed springs up at this time of year, lasting only a month or a little more, which is likely to taint the milk." The Wild Chive gives a rank, unpleasant flavour to milk and butter at this season. Try whether chloride of lime will cure it. Dissolve half-an-ounce of the chloride powder in a gallon of water, and put a teaspoonful of the solution to every gallon of milk as it is brought from the cow. Can any of our readers give us information upon this?

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7	6	0	17	2	2	0
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WEEKLY CALENDAR.

M D	W D	MAY 19—25, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
19	Th	Silver Cloud; shad. paling.	29.937—29.785	72—43	S.E.	—	4 a. 4	48 a. 7	2 50	11	3 48	139
20	F	Grey Birch; birch trees.	29.985—29.971	67—48	N.E.	10	3	50	3 9	12	3 45	140
21	S	Sun's declination, 20° 14' N.	29.992—29.972	61—46	N.	—	2	51	3 23	13	3 42	141
22	SUN	TRINITY SUNDAY.	30.039—29.995	61—47	N.E.	—	1	52	rises.	☺	3 38	142
23	M	Green Hair-streak; hedges.	30.062—30.027	57—45	E.	—	111	54	9 a 0	15	3 33	143
24	Tu	QUEEN VICTORIA B. 1819.	30.036—29.970	66—49	N.E.	—	58	55	10 20	16	3 28	144
25	W	PRINCESS HELENA BORN 1846.	29.955—29.876	61—49	N.E.	11	57	56	11 25	17	3 23	145

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 66.4° and 45.2° respectively. The greatest heat, 88°, occurred on the 20th in 1833; and the lowest cold, 29°, on the 25th in 1839. During the period 110 days were fine, and on 72 rain fell.

RUSTY GAULTHERIA.
(*Gaultheria feruginea*.)



THIS new plant has been variously called *Andromeda hirsuta*, and *Gaultheria tomentosa*, and those two specific names, or rather synonyms, together with that which is to be legitimately retained, give a true description of the outward appearance of the plant. It is a *Gaultheria*, with hairy or tomentose leaves, and young wood with a rusty appearance.

It is a very handsome plant while in flower; the woodent shows the manner in which the flowers are produced, and their colour is a bright pink. The plant is a native of the Organ Mountains, in Brazil, where it was often met with by the late Mr. Gardener, whose Narrative of his five years travels in the Brazils, in search of new plants, is one of the most useful and entertaining works on this branch of Natural History that was ever published. The seeds of this *Gaultheria* were gathered by Mr. Gardener, and sent by him to the Comely Bank Nurseries, Edinburgh, where the plant flowered last summer for the first time. It is figured and described in the *Botanical Magazine* for last February, t. 4697. It belongs to the order of *Heathworts*, and to the same section as the *Andromedas*, and to *Decandria Monogynia* in the system of Linnaeus. There is some reason for thinking it is identical with *Gaultheria bracteata*.

It is a small branching shrub, the younger branches, and even the young leaves, and stalks of the flower-clusters, are clothed thickly with rusty-coloured hairs, mixed with others that are glandulous. Leaves almost stalkless, pointed egg-shaped, saw-toothed, tipped with a hard point, old leaves

smooth, younger ones hairy; clusters of flowers at the end of the branches; the stalks of each flower bending to one side only, and pointing downwards, the young ones covered with red over-lapping bractes. *Calyx* large, cut into five hairy lobes. *Corolla* pitcher-shaped, and large for the size of the plant, mouth five-toothed. *Stamens* ten; filaments awl-shaped, hairy; anthers opening at the top by pores, each cell bearing two erect awns. *Ovary* flattened globe, five-lobed.

Culture.—This rare plant has had the good fortune of being first nursed at Comely Bank, where many of the most difficult plants in the world to increase and cultivate were first broke in, and brought under subjection to the art and calling of the gardener. I knew every inch, and pot, and pane of glass in this Nursery, when it was at its height in the wonder and admiration of all who knew or heard about it; when, as was the notion at the time, a difficult plant was not considered as being introduced into Scotland, if it was only in this Nursery, although it might be there by the dozen, because they could grow any plant there that could not be grown elsewhere. Now, when we recollect the fate of some most beautiful and interesting plants which Mr. Gardener found in company with this *Gaultheria*, on the summits of the Organ Mountains, *Prepusa connata* and *Hookeriana*, for instances, I cannot promise that this new *Gaultheria* will be easy to manage; and it can hardly be expected to be quite hardy, although it grows at an elevation of full 6,000 feet above the level of the charming bay of Rio, where the heat is not at all so oppressive as we had it here at the beginning of last July, and where smart frosts are not uncommon, though nothing like our English frosts. At all events, it is the safest plan to keep this plant for the first few years in a cold pit, in winter, but out in the full sun during the summer, and in the greenhouse only when it is in flower, and to give it good peat earth, and not to let it get very dry at the roots. Gardener found it “on an open rocky place” not far from the highest summit of the range, therefore, a shady place, such as would suit *Gaultheria procumbens*, will not be the right place for this species, but right full in the sun at all times, and all high Alpine plants like this require a constant free ventilation.

It is perfectly astonishing, that after so many eminent travellers have been on the Organ Mountain, and to the north and south countries bordering on Rio de Janeiro, and the facilities of running home things from the port of Rio, there is not another district on the face of the globe in which more kinds of beautiful plants are still wasting their beauty and perfumes in the virgin forests and hill sides. There is a climate of perpetual spring, judging from its position, bordering on the edges of the southern tropic; the short distance between the head of the bay, and the ascent to the mountains, which rise to a height of 7,000 feet, and the broken nature of the range into hill and dale, dry, exposed braes, and deep shaded glens. One of the *Hippeasters*, which I shall describe shortly, grows on the very top of this high range, and, therefore, must be about the same hardiness as *Gladiolus psittacinus*; many more of them grow lower down, in a greenhouse temperature, on the same hills.

D. BEATON.

To an observation which we made to the incumbent of a parish, who is, also, lord of the chief part of its soil, that the chief want among his parishioners was *Allotment Gardens*, we received in reply—"They should have them if I knew how to manage them." Taking him at his word, we made it our business to enquire for reliable information suited to our friend's guidance, and we are glad to be able to state that such information came to us from many districts. The difficulty has been which to select, but we have given the preference to a *Report of the Committee of Allotments at Southampton*, because it affords the requisite forms of documents, and details of facts, which will enable any one to pursue the same successful route. We shall, therefore, publish it without any omission, and think we may add that the members of the committee will be ready to give any additional information.

"The following report is published in the hope that it may induce others who live in large towns to undertake the management of allotments for the labouring poor on a similar plan, which consists in a committee renting the ground, having it divided, and letting it as allotments under their regulations; not as an act of charity, but by hiring the land at its market price and charging the allottees sufficient to cover all expenses. A portion of the report, it is hoped, may arrest the attention of the clergy who have it in their power to appropriate Glebe land to this benevolent purpose, without loss of rent—or to influence others to do so.

"In country places, the allotment system has been carried out chiefly by the land-owners themselves, but where there is no resident proprietor who is willing to take the trouble, and in large towns, the present plan will be found feasible, and of great benefit to the industry, comfort, and health of the labouring poor.

"The allotment system was commenced in this town by Mr. Betts: A field of 17 acres was let by him to one individual, at £5 an acre, or 7½d. a rod, who sublet it as allotments at £6 8s. 4d. an acre, or 10d. a rod. This was eagerly taken, and there was not an allotment vacant. Another field of 10 acres, called Hoglands, was rented by three persons, who sublet it in small allotments at 10d. a rod, although it was Lammas land and could only be cultivated for six months, between March and September. This was all eagerly taken.

"In consequence of the expressed wish of many more labouring men for allotments, and the refusal of the owners of land to let any quantity to poor men who could not be responsible for a large sum, a working committee of three was formed. They hired a field of 18 acres, and had it divided by a surveyor into 146 allotments of 20 rods each, or eight allotments to an acre, with convenient paths. Each allotment was numbered, and a piece of wood was driven in at each corner of every allotment, one of the pegs having the number of the allotment upon it. A map, with the allotments numbered, was drawn at the top of a large sheet of paper, with the rules beneath it, and the following form of agreement:—

"I agree to take the allotment to which my name is attached in the above plan, subject to the above rules."

"Each allottee was required to sign this when put in possession of his allotment, and a printed card, of which the following is a copy, was given him:—

No.
EAST MARLANDS ALLOTMENTS.
Committee.

Joseph Bullar, M.D.
William Bullar, M.D.
Edward Thompson, Esq.

Who agree to let to
twenty rods of Land, at Sixpence per rod, being Number
on the plan, subject to the following Rules.

Rule 1.—Term of tenancy, from March 25th to September 29th, 1850.

Rule 2.—Five Shillings to be paid March 25th, and five shillings August 1st, 1850.


" 3.—No work to be done on any allotment on any Sunday.

" 4.—No wheel-barrow, trucks, nor carts, to be used on the public paths.

" 5.—The allotment to be used for no other purpose than garden-ground; and any infringement of these rules shall give the committee power to take possession of the said land, and all crops or other that may be upon the said land.

Not transferable.

"The collector was provided with a printed Cheque-book with the following form:—

No.		EAST MARLANDS ALLOTMENTS. SOUTHAMPTON.	No.
		Received of the Sum of Five Shillings, being the Rent of 20 rods of Land, due	

"The land was Lammas land, and could only be cultivated from the 25th of March to the 29th of September. Half the rent was payable on receiving the card and signing the agreement, before taking possession, and the rest three months afterwards.

"The first year (1850) the committee charged the allottees 6d. a rod, or 10s. an allotment, which was at the rate of £4 an acre.

"Of the 145 tenants—120 paid in full, 7 paid 7s. 6d., 1 paid 6s., 14 paid 5s., 1 paid 4s. 6d.—so that 143 out of 145 paid rent, and 2 only paid nothing, and these were excused owing to death and severe illness.

"The whole sum which should have been received, had all paid in full, was £72 7s., and £67 9s. was actually paid by the allottees, so that the loss of rent was only £4 18s.

"The committee paid £50 rent for the half-year, but their expenses the first year, owing to their having paid £18 for the repair of the public paths on two sides of the field, left them minus £8 3s. 7d.

"The next year (1851) the committee slightly raised the rent, charging one shilling more, that is eleven instead of ten shillings per 20 rods

"Of the 145 tenants—141 paid in full, 1 paid 8s. 6d., 1 paid 9s. 6d., 2 paid 5s. 6d.

"The rent which should have been received was £79 7s., and £78 13s. 6d. was paid, leaving only 13s. 6d. unpaid.

"Owing to the increased rent and diminished expenses this year, the balance on the two years was now £4 12s. 1d. in favour of the committee.

"The third year (1852) the same charge was made of 11s. an allotment.

"Of the 145 tenants—134 paid in full, 1 paid 10s., 8 paid 5s. 6d., 1 paid 4s. 6d., and one nothing, from inability. Instead of the full sum, £79 7s., £76. 5s. 6d. was received, leaving only £3 1s. 6d. unpaid, and, at the end of three years, leaving a balance of £10 14s. 1d. in the hands of the committee, part of which they appropriate to the printing and circulation of this report.

"The applicants for allotments were taken indiscriminately by the collector, to whom they were to apply (his rule, he said, was "first come, first served"), and none were rejected the second year because they had been, the previous year, slow in payment, so that all had their allotments again if they wished them.

"The committee cannot but think this statement will be acknowledged as most satisfactory in regard to the payment of rent by so large a body of allottees taken indiscriminately in a large town where superintendence by the committee was out of the question, and that it shows the poor to be excellent tenants when the rent is diligently looked after by a zealous and honest collector. To the zeal, integrity, firmness, and yet kindness of their collector, Mr. Goodman, who from the first entered into the plan from a conviction of its benefit to the labouring classes, this result is greatly owing. His experience of three years showed him that it was very necessary to keep the allottees strictly to the order and rules of the committee, and that giving them, from kind motives, too much liberty, by allowing them to put off pay-

ment until it seemed more convenient to them, did them no good. He thought that the labouring men liked the arrangement and obeyed more willingly the regulations of a committee than they would have done those of a single individual. It has been stated by some who have let allotments, that it is better to choose tenants among the poor who are the best off, but the collector has constantly stated to the committee, that he has found the least difficulty in obtaining the rent from the poorest, and that those who gave him most trouble could afford to pay most easily. This is an important fact in favour of those who are most in need of this help.

"The committee charged the allottees at the rate of £1 2s. 2d. an acre for this Lammas land, but, at the same time, 10 acres of similar land were let by others at 10d. a rod, or £6 13s. 4d. an acre; and the allotments were eagerly sought after, and the rent almost wholly paid.

"In 1852, the Rev. J. C. Wigram, Archdeacon of Winchester, was appointed Rector of St. Mary's parish, which contains 21,220 inhabitants, a large proportion of whom are of the labouring classes. From the experience of the committee, Archdeacon Wigram, with the full sanction and desire of the Bishop of Winchester, decided to let on the same plan 20 acres of Glebe land conveniently contiguous to the houses of the poor. The same committee, with the Archdeacon as Chairman, undertook the management, renting the land at the full price at which it had been let to market-gardeners and graziers. It was partly arable and partly grass land, separated by ditches, with the remains of an abandoned canal running through it, so that the committee were at a considerable expense in levelling, fencing, and draining it. It was next surveyed and divided into 162 allotments of 20 rods each (a few having more or less, according to the shape of the land), and with paths broad enough to admit small carts. The committee besides paying all rates, and other expenses, agreed to give £6 an acre for six acres, and £5 an acre for fourteen acres, the full market price of the land; and as they did not wish to make it in any respect a charity, they found that they could not cover their expenses and risks at a less charge than 11d. a rod, or 18s. 4d. an allotment, except for a few allotments where the land was inferior, and which were charged 9d. a rod. Elevenpence a rod is at the rate of £7 6s. 8d. an acre. In this instance the allottees were also taken indiscriminately as they applied, and were not restricted to parishioners.

"At the end of the first year the following is the very satisfactory result:—£140 6s. 8d. has been received, and £5 17s. 9d. is still unpaid, of this 19s. is in the course of payment, £3 10s. 6d. are good debts, all of which will be paid, and £1 7s. 3d. bad, of which 8s. was owed by an allottee who died, 11s. 3d. by another who was incapacitated by illness, for which he was admitted into the Royal South Hants Infirmary, and 8s. by a tenant who went to sea.

"Instead of requiring all the tenants to sign the agreement on the same sheet of paper, it was thought more convenient to have two sets of cards, each tenant signing two, and retaining one himself whilst the collector held the other.

"The following are copies of the card and cheque book.

GLEBE ALLOTMENTS.

Committee.

The Venerable Archdeacon Wigram, Chairman.

Joseph Bullar, M.D.

William Bullar, M.D.

Edward Thompson, Esq.

Rule 1.—Term of Tenancy from 29th of September, 1851, to 29th September, 1852. The re-letting shall be at the option of the committee, who will consider the good conduct of the tenant, and his manner of cultivating the land.

" 2.—Nine Shillings to be paid April 1st, and Nine Shillings and Fourpence August 1st, 1852.

" 3.—No work to be done, or gathering of produce allowed, on any allotment, on any Sunday.

" 4.—No ploughing permitted, nor other mode of cultivation allowed except spade husbandry.

" 5.—The allotment to be used for no other purpose than garden ground.

" 6.—No occupier shall underlet his allotment.

" 7.—No live stock shall be turned out on any allotment.

Rule 8.—Any infringement of the above Rules shall give the committee power to take possession of the said land, and all crops and other things that may be found there.

N.B.—All doubts or disputes shall be settled by the committee, whose decision shall be binding.

I agree to take of the
Committee twenty rods of land, being allotment No. at the
yearly rent of under the Rules above printed.

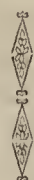
Signed,

Southampton,

1851.

Rent to be paid to Mr. Goodman, 16, Orchard-lane.

No.



GLEBE ALLOTMENTS.
SOUTHAMPTON.

No.

Received of

the sum of Nine Shillings and Fourpence, being the rent of 20 rods of land, due August 1, 1852.

"The committee have paid the Collector at the rate of one shilling a-year for each allotment. For this he takes the names of the applicants, procures their signatures to the cards, collects the rents, and attends the meetings of the committee when required.

"The collector believes, from the number of applicants, that he could let 40 acres in the same way, and the rector of St. Mary's has it now under consideration to let as allotments another field of 18 acres. This is the more necessary, as the Corporation, having under a recent Act of Parliament purchased the private interests in East Marlands Lammas field, intend to lay it out as a public park and garden, so that it can no longer be used as allotments, which the allottees consider a very severe loss to them.

"The sanitary advantages of allotments to the poor of large towns must be very considerable. They have, as a rule, no available gardens, and cannot afford to buy in the market or of green-grocers that due supply of fresh vegetables which they require. These allotments furnish with fresh vegetables and with good potatoes, 308 families, that is, above 1600 persons. To those engaged in sedentary occupations in close courts, alleys, and lanes, with no inducement for taking exercise, the cultivation of allotments at some little distance from their homes is most desirable, as it gives them the most efficient kind of exercise in the open air, with a good object. One tenant, whose business was sedentary, was wise enough to take an allotment for the sake of the exercise in cultivating it, and the following literal dialogue with a too corpulent allottee, gives concisely and clearly the gist of the matter:—

"Does it do your health good?"

"Does it, sir? I believe ye it does. I should go out o' my mind if it war n't for this bit o' ground. I lives in one of the closest parts of the town, and instead o' lopping into the beer-shop for half-a-pint and lounging about, I says, 'I shall go up to my farm for a bit,' and it does me all the good in the world."

"Well, I'm glad you've had such a good crop."

"Aye, sir, it's my pride is it, and I only grieve that others don't work their bits as they ought, so many as still be as wants the ground."

"And you get your vegetables very fresh?"

"Aye, that's what we do. I sold a peck o' peas to a body—she says 'we can't get such peas as these at market.'"

"There is another sanitary advantage in the allotments affording an immediate and useful outlet for manure from the pigsties and stables, and for the refuse of the houses of the poor. It is remarked that the allottees "farm high," and, consequently, make the most of that which is so much wasted in this country. Indeed, an allotment is often the poor man's bank, in which he invests much of his savings. The value of allotments is also great, inasmuch as they satisfy one of the strongest and most wholesome desires of the labouring poor, the wish to possess land, and to cultivate it for themselves.

"In this town there are numbers of working men, such as those employed in the docks, in unloading ships, bricklayers, masons, painters, and common labourers, who are never fully employed; many will tell you that they are

unemployed three, four, and even six months out of the twelve. To supply such with the means of profitable and healthy occupation, and such as they like, in their tedious compulsory leisure which they would otherwise spend in idleness, or in frequenting beer-shops, is a service to them morally as well as economically. And the working men in these parts look to, for they require, this kind of assistance from those who are socially above them, and they receive gratefully, and value, such disinterested attempts to improve their condition.

"The following list of the occupations of 307 allottees, show that men of very various callings in a large town are tenants"—

Labourers ..	122	Wheelwrights	4	Servant ..	1
Shoemakers	22	Beer-retailers	3	Coachman ..	1
Bricklayers ..	13	Porters ..	5	Hairdressers..	2
Carpenters ..	14	Ostlers..	3	Barrowman ..	1
Tailors ..	13	Braziers ..	3	Lamplighter ..	1
Bakers ..	8	Postmen ..	3	Gateman ..	1
Painters ..	8	Plumbers ..	2	Policeman ..	1
Sawyers ..	8	Coachmakers	2	Bonnet-cleaner	1
Butchers ..	5	Stonemasons	2	Pilot ..	1
Smiths ..	7	Cane-workers	2	Shipwright ..	1
Milkmen ..	5	Chairmaker..	1	Hatter ..	1
Gardeners ..	6	Boxmaker ..	1	Waiter ..	1
Sweeps ..	5	Tinman ..	1	Dealer ..	1
Cabinet-makers	4	Frniterer ..	1	Slaters ..	2
Basket-makers	4	Pastrycook ..	1	Coal-dealer ..	1
Plasterers ..	5	Lodginghouse-			
Brewers ..	4	keeper ..	1		

It seems but a necessary result of the present taste for poultry-keeping, that we should endeavour to learn something more of the early history and probable origin of our fowls, than the researches of Naturalists have hitherto provided for us.

If the following remarks should succeed in directing attention to such enquiries, our object will be attained, for with the present very limited knowledge of this subject, definite conclusions are hardly to be yet looked for.

The enquiry will probably be best opened by suggesting two questions.

First. What evidence have we in favour of the prevalent idea, that all our domesticated poultry have a common descent from some one original stock?

And, Secondly. If such a descent should seem probable, what bird should be regarded as the primitive ancestor?

To avoid any misapplication of the terms employed, we would commence with the observation, that by *varieties*, we mean the difference of form or feather visible in members of any one family—such as golden, silver, or black Polands. By a *family*, again, we intend a race of fowls which may contain many varieties, as when the Hamburgs, Shanghaes, or Bantams are spoken of; while by *species*, we allude to the different families collectively.

Among many points that call for explanation in considering the first question, the manifold varieties of the different families of poultry immediately attract our notice. Are all these, so distinct in form, character, properties, and plumage, descended from the same parents (for to avoid confusion, we may here lay aside the question of "*specific centres*," i. e. the question as to whether more than two, the male and female, of the different species were originally created)?

Now, not only may we refer to present distinctions, but, in some instances, we can trace their existence as clearly portrayed and noted throughout a long course of centuries.

The *Spanish* fowl may be cited as an example of such a peculiarity in form, having not only been described to us by early historians, but transmitted also to the present day, without the continuance of that tendency to vary from the original type, which has been assigned as a cause of the singular metamorphoses that now puzzle the enquiring poultry-fancier.

From the Straits of Gibraltar to the coast of Syria, and from the northern to the southern limits of the Mediterranean, we have the same singular development of the comb and wattles in the specimens, that, in common with other travellers, we have noticed as a general characteristic of the fowls of those countries. Their owners being altogether regardless of retaining for their birds any claim to purity of blood, various degrees of mongrelism are everywhere visible; but the type of the Spanish fowl, above alluded to, is still sufficiently apparent for its general recognition. But let us now turn to the authorities which treat of the fowls of that district in early times. Mr. Dixon has here rendered us material assistance, for in speaking of the Spanish fowl (page 273 second edition), he tells us that—"It is as near as may be the sort that Columella's relation might have kept in Spain 1800 years ago." And to show that the peculiarities of this breed are as widely scattered as we have mentioned, he adds this further testimony—"There is a large breed of fowls brought to us from Constantinople, and the shores of the Black Sea. I have had no opportunity of seeing specimens, but it would appear to be a branch of the Spanish. The hens are described as having a large flaccid comb flapping about like a piece of serrated red velvet, and as being astonishing layers, seldom setting." (*Ibid*, p. 275.) And fowls recently imported from Egypt are found with this feature similarly developed.

These distinguishing features of a certain family of fowls, still retained after the lapso of more than 1800 years, would go far to overthrow the notions of the evolutions of form, either in conjunction with, or apart from, the effects of domestication, that are generally relied on as the cause of the confusion that has induced these remarks. Why, it may be asked, does this typical resemblance continue permanent, if accidentally brought into existence by continuous inter-breeding, or any other accidental cause? But the period through which it has survived the effects of such intermixture of blood would surely seem to claim for it some degree of specific originality. The point in this allusion refers simply to the improbability of cross-bred birds of the same species being enabled to retain certain peculiarities throughout so long a period as the instance above cited would refer to. If they come by chance, chance, reasoning from present results, would most probably have obliterated them. We must search, therefore, for some better

reason to account for this tenacity of a certain feature so remarkably evidenced in the case before us.

If it be granted that this singular resemblance has been thus retained, and authorities for the past and present may fairly call for the admission in the Spanish instance, then the conclusion seems apparent, that either the deviations from the original type produced by breeding in-and-in, were then more powerfully influenced, and were productive of stranger metamorphoses, with a more permanent character, than they are capable of at the present day; or else, that the species must have comprehended families even at the very beginning of all things.

The first of these suppositions would require the admission, that the economy of this section of the Animal Creation then differed, and in such an essential point, too, as its own reproduction, from what is now observed with regard to its procreative system. But there is no authority for regarding this as probable, and it may, therefore, be dismissed from our present consideration.

Let us explain the line of reasoning, by returning to the reference to the case of the Spanish fowl alluded to above. Here we have the principal characteristic and type of the family remaining constant, like producing like, for 1800 years. Now we may, on the other hand, obtain strange combinations of form or feather, even more remarkable than this feature in the Spanish, but we cannot fix them; they are thoroughly evanescent; and with all our care and selection, a few generations scarcely pass before we find a rapid return to the character of one or other of the parents whose union had presented us with these novel features.

Naturally, therefore, is it asked, Are all our present distinct families of fowls derived from one common stock? If so, how and when was this distinction affected?

To that line of argument which relies on some direct alteration in their powers of reproduction, and the characteristics of progeny, we have only said, that hitherto there appears no reason why nature should have changed her course from what was originally ordained as the primitive directing principle of all creation. The results that we witness, therefore, have been very generally ascribed to the accidents of domestication and acclimatization, with what probability, however, must now be left for examination on another occasion. W.

So far is it from extraordinary, as was stated recently, for a *Shanghai* hen to weigh ten pounds, that we know of many weighing over that weight, but in every instance they are more than one year old. At this time, Mr. Fox has in his possession five *Shanghai* hens, the average weight of which is only just less than ten pounds; namely—Mr. Andrews's old hen, ten pounds eight ounces; Mr. Higgs's old hen, nine pounds eight ounces; an imported hen, ten pounds four ounces; a Sturgeon hen, ten pounds four ounces; and a hen bred by Mr.

George, nine pounds four ounces. Total weight, forty-nine pounds twelve ounces.

At the sale of *Orchids*, by Mr. Stevens, on the 6th inst., although the specimens were not generally superior, some of them were sold for good prices. The 127 lots realised altogether £201. *Phalenopsis amabilis* was knocked down for £6 10s; *Oncidium candelabrum* for £6; *Vanda Roxburghia rubra*, £6 6s.; *Phalenopsis grandiflora*, £15 10s.; *Angraecum bilobum*, £4 10s.; *Cattleya labiata*, dark variety, £5; and *Vanda violacea*, a true specimen, £14. A case of *Pine-apple Plants*, consisting of the *Manilla Conical Pine*, the *Penang Smoothed-leaved Pine*, and the *Penang Striped Pine*, streaked alternately on the leaves with green and white, fetched only £7, which, we believe, will not cover the expense of their overland carriage.

THE *Monument to the Memory of Philip Miller*, whose "Dictionary" is his permanent memorial, has been restored recently by a subscription promoted chiefly by Dr. Iliff. The monument, in Chelsea churchyard, was originally erected by the Apothecaries Company, and the inscription, with further particulars relative to Mr. Miller, will be found at page 157 of our fifth volume.

THE *Potato Murrain* has made its appearance among some of the earliest forced crops; but this is no evidence that it will reappear among those in the open ground. However, the very wet autumn, and the severe weather during the early months of this year, rendered Potato-planting unusually late, which is rather opposed to that early ripening of the crop, which is its best security.

MESSRS. J. WEEKS & Co., King's Road, Chelsea, have now in fine flower the *Cyrtopodium punctatum*, which has not been seen in flower in this country since it was exhibited by Sir George Staunton, Bart. It is a plant of easy culture, and if properly treated will flower freely. They have also, in fine blooming condition, the lovely *Epidendrum macrochilum album*, a beautiful and useful exhibition Orchid.

GLEANINGS.

MEDIEVAL TIMBER TREES.—In that very interesting early treatise on Orchards, by William Lawson, published in 1597, we have the following account of a large Oak:—"About fifty yeares agoe, I heard by crediblo and constant report, that in *Brookham Parke*, in Westmerland, neere unto Penrith, there lay a blowne Oake, whose trunk was so big, that two horsemen being the one on the one side, and the other on the other side, they could not one see another; to which if you adde his armes, boughes, and rootes, and consider of his bignes, what would hee have been, if preserved to the vantage."

TRANSPLANTING LARGE TREES IN THE OLDEN TIME.—The Lord *Zouch* in winter, in the yeare 1597 (and

Master *Andr. Hill*, thinketh moist weather is best, that the earth cleaving to the roots may be also removed with them, the earth being fast bound with Fearn branches to the roots), removed diverse Apple-trees, Damson-trees, &c., being of thirty or forty years growth, at *Hackney*; the earth was digged in a large compasse from the roots, the roots little hurt; holes were prepared for each tree beforehand, enriched with fresh and good earth; the branches and tops taken off almost close to the trunk; and they were planted again in the same bower wherein they were removed, and the roots placed towards the same point of the compasse as they first grew. He had a few Damsons the first year, and all put forth leaves at Michaelmas after, anno 1598.—*Plut's Garden of Eden*.

COVENT GARDEN.

THE market-gardeners of London have always been celebrated for the high state of cultivation which their land presents, and it is on this account that they are enabled to do, under high rents, expensive labour, and oppressive rates, what in other parts of the country would, under the most favourable circumstances, be considered almost miraculous. It was about the beginning or middle of March, that we saw some five or six acres of *Cos Lettuces* planted out during a few days of sunshine and hope, but in a few days more they were so punished by the severe frost that followed, that scarcely a vestige of them was to be seen. Some prophesied the crop was lost, and to all appearance it was so. You might, by looking over the field, see where something had been, but a stranger could not have told what. We saw these same five or six acres a day or two ago, and what a few weeks since seemed a blank, is now one of the finest patches of *Cos Lettuce*, four inches high, that is to be seen in all the county of Middlesex. But where, in all this kingdom or the next to it, is there another six acres of *Cos Lettuce* that could have gone through so much, and now look so well, except under the *regime* of a London market-gardener? It was the state of the soil, saturated as it is with London manure, that has brought these Lettuces to what they are.

We saw another and a smaller, nay, a very much smaller, patch of the same crop, which was under the management of a private gardener, one of those very knowing suburban prowlers calling themselves gardeners, who, if he choose, could have had as much manure for his purpose as the market-gardener had, but did not, and this patch we very much fear will never produce a *Cos Lettuce* at all without being replanted. And so it is with the high cultivation practised by the London market-gardeners, that they are enabled, notwithstanding the very unseasonable and backward summer weather we now have, to produce, even now, vegetables of fair and good quality. The market, therefore, is well supplied, that is for the season. *Greens* are from 2s. 6d. to 3s. 6d. per dozen bunches. *Broccoli* 2s. to

4s. per dozen. *Celery* 9d. to 1s. per bundle. *Turnips* 3s. to 4s. per dozen bunches. *Radishes* 1s. to 1s. 6d. per dozen bunches. *Lettuce* from 1s. to 1s. 6d. per dozen. *Spinach* 2s. 6d. per sieve. *Cucumbers* 6d. to 2s. each, of very varied size and quality. *Rhubarb* abundant at 6d. to 1s. per bundle. *Sea-kale* 2s. 6d. per basket. *Asparagus* 5s. to 10s. per bundle. Forced *Potatoes* 1s. to 2s. per pound. FRUIT is very much the same as we quoted last week, except *Strawberries*, which, of course, are lower in price as the supply increases; they are now making from 6d. to 1s. per ounce. The FLOWERS are very abundant, and are of the same description as we have noticed in former reports.—H.

PLANTING AN ORCHARD OR FRUIT GARDEN.

(Continued from page 78.)

I MUST now turn from the orchard for awhile to the kitchen-garden possessing a wall; and it will be well to take into consideration the mode of furnishing the latter, both as regards kinds, with their disposition, and the formation of stations: the latter being a most important proceeding, for many reasons.

By *formation of stations*, I mean such a mode of preparing proper soil for the trees as shall prove economical as to the use of composts, insure success, and afford every facility to the root-pruner, if his operations are needed.

It was by no means an uncommon practice, in bygone years, to pave under the roots of trees, and to introduce fertile composts; but this practice had fallen into comparative disuse; and such a desire for progress existed in the gardening world, that people, in their ardour, overshot the mark, and pushing the idea as far as they were able, took to making deep borders, in a wholesale way, out of the plunder of the paddock. Now, I should have no objection to be possessed of a border, some three feet deep, in a rich loam thus obtained; but I really should not like, as the possessor of a rich field, to have it thus injured—It is paying too dear for the object in view.

Before proceeding to appropriate the ground to the necessary quantity of fruit-trees, I may as well explain the mode of *making stations* for them. Very few gardens have a natural soil so bad as not to be qualified at least to mix with some good loamy material. In some cases, one-half of the natural soil may be worked up in the stations; in some, only a third, whilst others are so good as to do entirely without any more fertile addition.

It has been repeatedly stated in these pages that all fruit-trees are most successfully cultivated in a sound, loamy soil, but as many of our readers have not a just conception of what constitutes a *loam* in the gardener's estimation, I may here explain it. Loams are not distinguished by colour alone, although the very best kinds are generally of a yellowish-hazel colour; indeed, the latter term has been applied to our best loams, by common consent, for a century or two. I have, however, met with excellent loams which were almost yellow, and others as near to red; indeed, some of our best agricultural loams are exceedingly high-coloured, and commonly called "red earth." But it is the requisite adhesive quality which fruit-trees most desire. We seldom find them to succeed in a soil so loose that it cannot be made to cohere; the addition of manurial matters cannot compensate for the want of this coherent quality. But there are extremes to be avoided in this matter; a loose, sandy material, not capable of coherence, and an almost indivisible clay, are equally to be avoided. A good fruit-tree loam, in a tolerably moist state, will readily

adhere, if squeezed in the hand, and will as readily fall to pieces, if dropped from about five feet in height on hard ground. This, if the loam is neither dry nor wet, will at once prove its character. As to colour, it is not so very material; but, of whatever colour, it ought to be the same throughout, if possible. A loam with a variety of shades is to be avoided, such not unfrequently containing oxide of iron (rust), which is understood to be prejudicial to some kinds of trees.

The *making of stations*, then, is a matter of economy, as well as of principle; they combine the following advantages which cannot be secured by the ordinary border. What good soil or loam can be spared is secured in the immediate vicinity of the roots, which, by this mode, are ever kept more at home than by ordinary planting; a little of good loam, therefore, is made to go a long way, and loam is to most persons a costly article. Stations also prevent the descent of the roots to an inconvenient depth; and they furnish a boundary-line for the root-pruner, who may generally carry his operations to the very foot of them.

I consider, that if the soil is rightly constituted, two feet in depth is not only sufficient for any kitchen-garden fruit-tree, but by far better than a greater depth. Everybody knows that persons who possess a vegetable garden within walls desire to have dwarf fruit-trees also.

Let not our readers suppose that by the term dwarf, I would fain persuade them to have a garden of cripples. I merely mean that it is exceedingly desirable that the trees should be perfectly compatible with vegetable culture, and with a fair and easy survey of all the garden, as well as convenience of access to its respective portions. On such a foundation, then, I trust that my future advice may be judged. If I prove faulty, it will be in the aim I have taken, rather than in the details.

My practice, for more than twenty years, has been to mark out six feet square as the site of the station, and this is excavated twenty-eight inches in depth, viz., two feet for soil, and the extra four inches for a hard bottom to the station. In throwing out the soil a due regard is paid to its character. It not unfrequently happens that three samples may be met with and classed. Thus, a plot may possess layers of gravel, coarse sand, with true soil on the surface, and it is most desirable that they should be kept separate. However, there are generally two classes, and according to their quality, so may they be used up, with the addition of a little loam. When the subsoil is but little inferior to the surface soil, I have frequently exchanged it for some of the good surface soil of the garden nigh at hand, and this with considerable benefit to the vegetable crops, as containing much fresh inorganic matter for their sustenance—indeed, this plan may ever be practised where practicable. As for clay, sand, and such materials, they may be wheeled away altogether, unless any alterations at hand may need such materials. This will generally make way for the addition of a little good loam.

One caution is here requisite to the uninformed, and that is as concerns the *depth*. We before stated that two feet is a very proper depth, but the question still remains, whether any portion of that be above the ordinary ground level? And here it will be necessary to point to the injurious effects resulting from excavating fruit-tree holes so low as to form what is termed "a pot."

In order to make the matter more clear, we will suppose a soil in its native condition only eighteen inches deep, and resting on a substratum of clay. Now, to sink a hole for the station two feet in depth, will, of course, carry the operator six inches into the clay. And what would be the consequence? Why, the roots would either be imprisoned when they reached the sides of the hole, or must penetrate an ungenial subsoil. To avoid this, give the extra six inches *above* the ground

level, and, by consequence, plant the tree higher. Let no one fear for the fate of his trees thus elevated. Such elevation will cause them to tend more to fruiting habits, and to dwarf and compact growth. It is well, however, in such cases, to use a stiffer loam, in order to obviate the effects of long continued drought. In our more northern parts, indeed, especially in such climates as the north of Ireland and some parts of Scotland, I would advise that the elevated platform be adopted irrespective of subsoils; there can be little doubt as to the soundness of the policy.

Having thus cleared the way by handling a few collateral points, we will proceed to the mode of filling the stations with a *proper compost*. In a majority of cases, one-half of the excavated soil may be worked up with the new compost; another fourth may be the exchanged soil of the kitchen-garden before alluded to; there remains, then, a demand for one-fourth of sound loamy soil. Now, if the natural soil be very poor and loose in texture, of course more loam should be applied, if obtainable. Previously to filling, our practice is to form the surface of the subsoil into a convex shape, especially if a retentive bottom; we then place brickbats, or pieces of stone, all over the surface, as close as possible, and then sweep a little very fine gravel or cinder-ashes into every crevice. We have found, by experience, that few fibres penetrate this. Next, we have been in the habit of strewing a couple of barrows of half-rotten leaves over the surface of the brick, and in this stratum we have generally found abundance of fibres nestling with little desire to escape, the leafy material enduring many years. And now the soil may be filled in regularly, frequently strewing a little from each heap, so that the whole may be uniform in texture.

It is necessary at this point to observe, that it is of much importance to the permanent welfare of the trees that the compost contain a liberal amount of organic matter, and if the loam is not turfy, something should be added to represent the fibre of the turf. Nothing is better, perhaps, than half-decayed leaves; but as every one does not possess such materials, it is well to know that any coarse straw or herbage will much assist; and the longer it endures in the soil the better. Anything, in fact, that has once been a living vegetable body will be beneficial, and this may be strewed constantly over the soil in the act of filling.

It must not be supposed that this mode of preparing stations is very laborious, or expensive, because its description occupies a good deal of paper; there can, we assure our readers, be no simpler plan, if any preparation may be made. If any plan be really expensive, it is one which involves failure in the end. We are quite aware that there are soils in which there is no need to take these precautions, but we fear such plots are in a minority.

And now for distance of planting, whether walls or marginal borders, on the dwarfing system. Our practice is, on ten-feet walls, to place the trees six yards apart, as a general rule; and this, by our mode of planting, will be sufficient for any height. On the marginal borders, the ordinary untrained dwarf standard is allowed about five yards; this, however, deserves a separate consideration, as many special matters will have to be referred to; it must, therefore, pass on to another chapter.

R. ERRINGTON.

CAMELLIAS—THE LION OF SURREY—BANK GROVE.

AFTER being on the London boards for more than twenty years, and after seeing the chief of our exhibitions there during the time, and taking part officially at many of these gatherings, so that I may truly say

that the rise and progress of our present high advancement in gardening are as familiar to my mind as the head is to the pillow, people at a distance may wonder to hear me say that I have lately seen a "sight"—also in *our* way—that I shall never forget; that I never saw the like of it before, and that I do not expect ever to see the like of it again, if I pass my days in these climes. Through the kindness of a lady neighbour, I obtained an introduction, about the middle of last April, to what, for the present, I must term only the "Lion of Surrey."

The name of this lion is at the head of my letter—*CAMELLIA*, whose name is legion; but the particular kind in question is *reticulata*, a distinct species brought over from China by Captain Rawes, in 1820. It was first figured and described in the *Botanical Register* (t. 1078), and next in the first number (1830) of Chandler and Booth's "*Illustrations*" of Camellias. The authors of this truly splendid work are both alive to this day, and only twenty-three years older than when they wrote thus of this species—"We are of opinion that when it becomes so plentiful as to admit of a trial being made, it will be found to be hardier than the *Camellia japonica*, and that at no distant period, perhaps, it may ornament our shrubberies." This last hint was made, no doubt, in reference to one of the most popular topics of the day in 1830. For the five or six preceding springs, flowers of Camellias, "which stood the last three winters," were sent up to London from all parts of the country, and nothing was *then* more familiar to our minds than that Camellias were just as hardy as the Portugal Laurel, in England, but that they could not open their flowers with impunity in the face of our cold easterly winds, and the alternate action of the sun's rays and hoar frost. Therefore, the matter soon dropped, but now it has been revived a second time within the last few years.

About the year 1835, the late Sir John Broughton purchased the "Lion of Surrey" from the late Mr. Smith, the celebrated Rhododendron crosser of Norbiton, close by Kingston, along with other new Camellias, and he had three of the best kinds of them—*reticulata* (the Lion of Surrey), *fimbriata*, the best of all the whites, and *Woodsii*, then one of the best red ones, but now superseded by many. He had them planted in a house by themselves, this house being the middle one of a range, from which it projects considerably in front, and this front is a half circle, with a curvilinear roof, the upright glass being fourteen feet high before the springing of the roof. The width in the centre is twenty-two feet, and the length along the back wall twenty feet. The "Lion of Surrey" now occupies the whole of this space, so that one cannot pass along the circular paved walk in front without being partially shadowed by some of the higher branches. It has some resemblance to a vigorous Portugal Laurel standing out on the grass, is twelve feet high, and very broad and spreading at the top, and it is clothed with leaves to the very surface of the bed, where the circumference is just twenty-four yards round, for I stepped them three times to make sure of it.

When I first saw this "Lion of Surrey" it was clothed from top to bottom, and all round, in one whole sheet of blossoms, each bloom being much in the same style, size, and colour as those of the *Pæonia Moutan rosea*. I was asked to guess the number of flowers then open, and I put them down at 1500, but I was mistaken by their unusual large size, and I was told that not more than 900 were open at one time, but there were 3000 flowers that fully expanded and came to perfection on this plant this very spring, and 2973 buds were thinned out from it last autumn as soon as they were large enough to be displaced! Not more than one single bud was left on any point all over the plant.

I also learned, for the first time, and saw the thing myself, that any respectable person might walk or drive in from Monday morning to Saturday night to see this grand sight as freely as go along the Queen's highway.

The next thing after a grand sight, or an unusual treat, is to wish that all ones friends had been there to enjoy it as well, and the next feeling is to give an account of the entertainment, unless, indeed, one could do as his Grace the Duke of Devonshire did, return next day with some of his nearest friends to see this very Camellia. I forgot to ask what his Royal Highness Prince Albert thought of it. But I shall never forget the most usual remark that parties make when being conveyed over a garden for the first time. "What would he (the last proprietor) say if he could rise and see all this!" I could not help remarking how delighted Sir John Broughton would be if he could rise and see his beautiful place so much improved in five short years, and that all the large sums of money which he expended on it have turned out such a good investment; for at his decease, Bank Grove was bought by W. Byam Martin, Esq., the present proprietor, and, as is understood about Kingston, at an enormous high figure.

I am indebted to Mr. Byam Martin for his kind permission to report on his garden improvements at Bank Grove, and for allowing Mr. Payne, his head gardener, to accompany me, and answer all questions about the management of the plants. Meantime, as "Devonian," one of our correspondents, has written to ask the way of growing Camellias, so that he might compete with "the Paxton of North Devonshire," I shall begin with them by remarking, that I never saw a more extensive collection of them in one place, or better grown specimens anywhere. A large conservatory, one hundred feet long, attached to the drawing-room, is quite full of the most healthy-looking Camellias in the country, all specimen plants, planted out in a central bed, and also along the back wall, their branches and leaves sweeping down to the ground; the soil is upwards of two feet deep, well-drained, and made of the best yellow loam two parts, and one part of the best peat, both from Wimbledon, and this is the compost they use in all the pots for Camellias. The younger plants are potted every spring, a little before the buds begin to open; from that time, until the growth of the young wood is finished, and the buds for next year are set, they give them enormous quantities of water, so that all the soil is thoroughly wet through and through, night and day, all that time. It is now more than twenty years since the late Mr. George Loddiges, of Hackney, told me that he believed all Camellias whatever might be set in pans of water; that is, under the pots, during the months of April, May, and the first half of June; and I am persuaded more than ever, that nine-tenths of the failures with Camellias arise from a deficiency of water during that period; and I am almost sure that a healthy young Camellia might be kept from flowering, for years in succession, by keeping up this constant stimulus with large doses of water throughout the summer; and, moreover, that to get a seedling Camellia to flower earlier, or a variegated Camellia to show the stripes and blotches more clearly, less water must be given; also, that shy bloomers must be reduced in strength by the same means, before they can ever flower freely enough to humble them, so as to become free bloomers ere they come to old age, or before we get tired of them.

Another very great evil, and one which is prevalent, is giving too large pots to young Camellias. It is only now and then, when one sees such a collection as this, where every leaf is as soft as a young cabbage, and as shining as a looking-glass, that the general run appears so manifest, and so much against the nature of the plant. The French, but the Germans more particularly, could not keep a leaf on their Camellias if they had

them in loam, like us, under their clearer and hotter sun. Their compost is a soft, boggy peat, which holds water like a sponge. They invariably repot their Camellias in October, so as to have this soft peat full of their roots before it is time to begin heavy watering in the spring, and English gardeners look with wonder on the very small pots which carry such healthy-looking plants, and so full of bloom-buds, too, as come over from the continent every winter to our markets. But these plants are the very incarnation of deception itself, for they had not been repotted for the two previous years, and the art of man can hardly drive the roots out of the hard, peaty ball, and putting such into large pots only hastens their ruin, the balls being waterproof in the middle of plenty.

The finest Camellias in bloom, in the large conservatory here, when I first called, was *Bealii*, trained against the back wall. It was one mass of bloom. Of the old Camellias, this comes nearest to the red *imbriata* in shape, and of the new ones, the *Duchess of Buccleugh* ranks next to *imbriata*. Her Grace was a seedling raised by Mr. Jackson, of Kingston, and another of his best seedlings is called *Martinii*, in compliment to the liberal owner of Bank Grove. There is a very good figure of this fine Camellia in the *Florist* of May, 1852. It is the nearest to scarlet of all we know of, and the tip of the petals are marked with an angular white spot. Some think that *Lady Broughton*, a deep crimson flower, is the best of the Kingston seedlings; for my own part, I would first choose this *Martinii*, and next to it the *Countess of Ellesmere*, which is a cupped flower of a blush-white ground, delicately striped with rose, and the cupped form holds good to the last. Fine examples of all of them are to be seen here, and the finest variegated of all, a seedling by Mr. Chandler, of Vauxhall, called *Prince Albert*, or *Albertus*, has attained a full size. Nothing in its way can be more beautiful than this flower. It comes the nearest in colours to the Chinese Azalea, called *Exquisita*. The habit of the plant is very close, like that of *tricolor*, another great beauty here, growing as closely as the narrow-leaved myrtle. *Imbricata* and *Woodsii*, the companions for many years of the "Lion of Surrey," are removed to this house, at the suggestion of Sir W. J. Hooker, from Kew. *Elegans*, one of the most favourite of all the rose-coloured ones, was in magnificent bloom on the back wall; but when all are so good it is a puzzle how to point out singly. *Chandlerii*, in a slate box, by the drawing-room door, and trained up to the wall, was the most healthy looking Camellia I ever saw; it was loaded with flowers of nearly as deep a colour as *Carolina*, and not a single trace of the usual white stripes and blotches; and *Donkelaarii* was less marked here than I ever saw it before. The truth is, they grow these variegated ones too well, and I expect it is the same with the *Marchioness of Exeter* Camellia, trained against the back wall in another house, which I wanted very much to see in flower, for I have never seen a bloom of it yet; but no man in his senses would give that name to an inferior flower, nor could he to a more worthy patron of high gardening.

In the regular Camellia house these plants look on a par with those in the Conservatory, and all along the back wall the plants are growing in slate boxes, set on a stone pavement. Also on the back wall of another long house, which is entirely devoted now to a full collection of the finest seedlings of Chinese Azaleas, every plant of which is a specimen plant, not quite so large as they now bring to the shows, but as finely grown as any that were ever exhibited.

Were it not for the specimens of Heaths which I have seen in the Edinburgh Botanic Gardens, I confess I should be inclined to assent to the general belief round

London, that there is no peat in the world so good as that from Wimbledon Common for growing these plants in. *Mirabilis* is one of the best of all these Azaleas, the colour is that between rose and geranium colour, which almost all ladies admire; the substance waxy, and the shape perfect for a florist; *macrantha*, a large purplish flower; *atrorubens*, deep carmine; *speciosissima*, a deep rose; *formosa*, with a purplish tinge; *exquisita*, *eximia*, *magniflora*, and, indeed, all the best of the race are here seen together in one mass of bloom at the beginning of May; and, when making their growth, they receive April temperature, that is, warm days, damp afternoons, and cool nights, while the Camellias, during their growth, receive May temperature, April showers, and warm, moist nights, with a slight shading from the sun, and the climbers strictly kept in to the rafters. Of these, the different species of *Kennedya* and *Ziehya*, *Sollya linearis*, *Hamrothamnus elegans*, with *Fuchsia Carolina* and *serratifolia*, are the chief in use. The *serratifolia* blooms almost all the year through; and to have it in pots, after seeing how it rambles away in the freedom of the open border, and how it flowers then, seems little short of caricaturing the plant altogether.

In the stove, the chief climbers are the best of the *Passion-flowers*, as *Kermesina*, *racemosa*, or *princeps*, *quadrangularis*, &c.; *Combretum purpureum*, on the spurred system; *Stephanotis floribunda*, *Henfeya scandens*, and another stove climber called *Lettsonia tomentosa*, a plant which needs to be corrected in our "Dictionary." The real name of this climber is *Argyreia*; it is a native of the East Indies, and was named *Lettsonia* by Roxburgh, but that genus was pre-occupied by Ruiz and Pavon with quite a different plant from Peru. *Argyreia*, *Pharbitis*, *Ipomœa*, and *Convolvulus*, are all brothers and sisters among the Bindweeds, and this *Argyreia tomentosa* is a large, woolly-leaved Bindweed, to all intents and purposes. It has either not come to a flowering age here, or it must be shy to bloom. When it will bloom, if I am right, the flowers will look like our own large, white-flowered Bindweed in our hedges, and that will settle the question. Our "Dictionary" has "taken" so well, that in future we shall be thankful for any corrections that may be sent to us respecting it, to come in for future editions.

The chief attraction out-of-doors, at this season, at Bank Grove, are the different views of the Thames, which runs down by the side of the pleasure-grounds; the majestic old *Cedars of Lebanon*, now casting the scales of their seed-cones in all directions; the fine old Elms next the house, with Wall-flowers springing out from their roots, as if sown by the nightingales before they left the Grove last summer—an original idea, well worth carrying out. A large clump, also, of old Elms near the Rosary, covered three-parts of the way up with huge mantles of Ivy. The full-grown purple Beeches, the Oaks, the Sycamores, and other large trees, which make up the "Grove," the Arboretum, and especially the Pinetum; but I must leave them to-day with regret, for want of room, and only mention a few very remarkable specimens.

Of these there are three of Holly-leaved *Berberis* (*B. aquifolium*) on the grass, now in full flower, each of them about seven feet high. One is just fifteen yards round close to the extremities of the branches, which sweep the grass; the second, a full yard more than that; and the third, no less than eighteen of the longest steps that I could make. Likely enough, those very plants cost Sir John Broughton five guineas a-piece; and although one could buy thousands of them to-morrow, at Kingston, for five shillings the hundred, the large specimens are each worth twenty guineas between two brothers.

The real Pinetum was only begun by Mr. Byam Martin, in 1848, with the best specimens he could pro-

cure of all the more choice species, following them up to the present time with all the best new ones as they come into the market; and it is worthy of remark, that of all the Pine family, *insignis* turned out the fastest grower. This will be the pride of the Grove some day. It was only planted in January, 1849, and is now full twenty feet high, a picture of health and symmetry. *Cryptomeria japonica* vies with *Taxodium sempervirens* here in growth, and one of the *Cryptomerias*—a seedling, no doubt—grows just with the same free, loose habit as the *Taxodium* itself. Not a leaf of the *Cryptomeria* was hurt here by the last frosts, but plants of *Taxodium sempervirens*, twenty feet high, had had many of the leaves scorched, but none of the buds, or young wood. A beautiful specimen of the Funereal Cypress (*Cupressus funebris*), from the "Vale of Tombs," in China, about a yard high, had about an inch of two top shoots killed, but other young tops close to them escaped altogether. Of the following plants that were planted out only in 1852, round the new American garden, I made a particular examination as to their hardiness: they are planted singly, and at good distances apart, on the grass, and without any particular shade or shelter. The flood, last winter, rose to within a few inches of most of them; so that, between the recent planting, bad winter and spring, with a low situation, they had as much trial as one could wish. *Sargotheca conspicua*, the leaves browned considerably, but not a bud killed, and they are just breaking. *Libocedrus Chilensis*, which produces the far-famed *Alerce* wood of Chili, I am now perfectly satisfied in my own mind is as hardy as the Scotch Fir. It was planted out last year in the middle of an open space on the grass, without any shelter whatever, and it never ceased growing since last September—the winds and frosts did not even brown a leaf of it. It is twenty-one inches high, and the lower branches assume the natural habit of the old tree already, showing that all the drawings that have been made at home from the dry specimens give quite a false character to this beautiful tree. Every branch comes out at right angles from the main stem, then drops down considerably, after the manner of the American *Arbor vitæ*, and rises again at the point perpendicularly. Both sides of the leaf have a white furrow, or mark; so that when the branches wave about in the wind, the shades will be more distinct than in any other Conifer.

This is the last tree I helped to plant before I threw the spade over the garden-wall, and the one which His Royal Highness Prince Albert planted at Shrubland Park, to commemorate his first visit to that beautiful place; hence my delight at finding it to be quite hardy. *Biota pendula*, alias *Cupressus pendula* and *filiformis*, two feet high, with the branches hanging down, a native of China and Japan, has the leaves a little browned, that is all. *Abies Jessoënsis*, a large fir from Japan, nine inches high, has some of the top leaves a little browned. *Abies*, or rather *Picea nordmaniana*, from the Crimea, unscathed. *Abies nobilis*, from the Columbia River, quite hardy, of course, but mentioned for being a fast grower, or promising to be so. *Pinus ayacatruite*, a lofty tree from Mexico, of doubtful hardiness, has only a few of the leaves slightly affected. The *Mount Atlas Cedar* the same. All the new Hollies, from *latifolia* to *myrtifolia*, have stood uninjured. Two immense large bushes of the *Tree Peony* were covered, but most of the flower-buds were destroyed, more or less. Three large plants of *Rhododendron Broughtonii*, one of the very best of the early Arboreum crosses, once supposed to be quite tender, stood unharmed these three years, and flower as much as the large Camellia. The new American garden is planted with the best Bagshot crosses, a whole bed being allowed for each strain. The Roses, for which this place was celebrated for years, will stand over, with other things, till they come to bloom.—D. BEATON.

CONTEMPLATED SPAN-ROOFED GREENHOUSE AND VINERY.

A CONSIDERABLE amount of space and attention has already been devoted to this subject, but either the directions and criticisms given have not been definite enough, or our subscribers have not troubled themselves much with generalising, imagining, no doubt, that their own circumstances were peculiarly different from any others referred to. When a number of enquiries on such a subject reach us from one source, we are under the necessity of giving merely a "yes" or "no" answer in the correspondents column, which could not, therefore, be generally interesting, or to give the subject the prominence of a general article. As this is now an excellent time for building, the matter, we trust, will be generally interesting.

Our correspondent, (M. L., of Beaminster,) who desires our criticisms and answers to various queries, which will be understood by the replies given, states that the house for the purpose specified above, is to be 16ft. by 14ft. in the clear—that the gable ends are to stand north and south—that the height of these gables is to be 8ft. 3in.—height of walls all round, before the rise in the gable, 5ft.—to be brick on the north end, but on the south end, and east and west sides, to be 2½ft. of brick, and 2½ft. of glass—that the roof, therefore, will be at an angle of from 30° to 35°, but it is feared it will be too flat—that a partition, of the width of one light, will be shut off on the north side, in which the fire-place for the flue will be placed, and hopes are entertained, that in this small division, plants requiring more heat may be grown. Ventilators are to be placed in the brick walls, and in the glass gable end. There is to be a shelf on the east and west sides, level with the brick-work, 1ft. 6in. wide; path, 2ft. 9in.; and platform in the centre, with the exception of a space at the north end, left as a border for climbers. The floor of the house to be dug out to the depth of three feet, filled with stone, rubble, &c., and then paved, &c.

1stly.—On this we would observe that the house will be a very useful and convenient one for greenhouse plants, provided no person of tall stature is expected to perambulate through it. To enjoy climbers and vines in it, a person would require to have the height that Mrs. Stowe assigns to the gentle, warm-hearted, yet resolute, Mrs. Bird, somewhere over four feet. Allowing the height of the sides 5ft., height of centre 8ft. 3in., and granting that the height at the sides is increased six inches by the plate on which the roof-rafters are placed, the height above the path will not be much more than seven feet. Now, allowing the vine leaves to be, at least, one foot from the glass, and shoots and points of bunches reaching about a foot more downwards, there would be little more than five feet standing-up-right space. For vines or climbers, then, I recommend the side walls, and the centre ridge, to be, respectively, one foot higher. Of course, the same object would be gained by lowering the floor inside, by stepping down into the house from the ground level, having one or two steps at the doorway; but this, though it would husband warmth, always lessens the dignity of the house, and the ease and convenience of ingress and egress. We have nothing to say against the *size* of the house; that, no doubt, must be regulated by circumstances; but a few feet additional in *length* would give it a more handsome appearance. Many houses of this kind have an opaque north end, by being placed against a wall already existing, and, in that case, less heating power is required; but the house in question seems isolated, and, therefore, I see no valid reason why the north end should have five feet of brick-work, and all the rest of the house only 2½ feet. It would look better to be uniform all round, more light would thus be secured,

while the additional 35 square feet of glass would furnish no serious item either in the way of purse, or as a radiating-of-heat medium in winter.

2ndly. *Position of Platform and Shelves.*—These are mainly right. With a shelf on the east and west sides you will have a platform 5ft. 6in. in width, very convenient for attending to the plants. But, at the risk of reducing the length of the platform, I would bring the shelf round to the door-way in the middle of the south end, and were there no partition I would do the same on the north end. In fact, were the house mine, and the only one I had, I would, if I divided it at all, divide it in the middle, and have both ends similar, but discard all attempts at heating from the inside.

One word more as to the eighteen-inch shelf—do not have it level with the top of the brick wall, but from three to six inches below it. The reasons are these—The roots in the pots do not require direct light, more upright space is given to branches and flowers, and these, consequently, have more light; and the pots are not so unduly cooled in winter, and heated in summer, as when standing freely exposed above the level of the glass line. The sinking of the side shelf will enable you proportionately to elevate the central platform—that is, the height between them may vary from three to six inches.

3rdly. *Border for Climbers in the Centre of the House.*—There is no necessity for entrailing the length of the platform on this account; make the border all the same, but let the platform go over it. If it is a sparred platform, you can easily bring the climbers through the spars. If solid, as of slate or stone, leave holes or openings through which the climbers may pass. It will be well to have them four feet in height, at least, before planting them. If you intend having vines on both sides, there will be little room for climbers, unless at the apex of the roof; and what are otherwise grown, should be trained longitudinally, as then they will meet the vines at right angles, but you cannot do much with both. Even with *Vines* on the rafters, a couple of *Passion Flowers*, a blue and purple, dangling from the apex of the roof, would have a graceful effect.

4thly. *Partition, and its object.*—With one of these objects I entirely sympathise. Not only may thus more tender plants be grown, but plants of equal hardiness treated according to their circumstances. For instance, a greenhouse plant, shortly after being pruned, requires a close, moist atmosphere to encourage fresh growth; a similar plant, when in bloom, requires an airy, cool atmosphere to prolong it. I have repeatedly stated how this may be done in a house without divisions, merely by keeping one end closer than the other, and this is still easier done when the heating is by the *flue*, as that will always be hottest at the fire end. A complete glass division gives, however, very decided advantages; and thus, in a small house, enables you to have a place suitable for growing, and another suitable for blooming. But I have little sympathy with the idea of making this division into a fire-place and stock-hole likewise. The mason was quite right when he spoke of the danger of back smoke. If that should take place, you will sacrifice, according to your own plan, a fourth part of your house, for what will be of no more use in winter than a potting shed.

I have had to manage such houses when the smoke was very troublesome, especially when the fire had been unlighted for some time. I once had the management of such another house that was never known to smoke, but the stock-hole was *deep*—the rise from the bars of the furnace to the bottom of the flue was from *two to three feet*, and a strong draught was further promoted by a *tall chimney*. Without such advantages, I should decidedly prefer sinking a stock-hole outside the house.

It may be at the end all the same, and the furnace be wholly inside the house. By arching the hole over, nothing more than a square yard of a flap-door need be seen, and thus all danger from smoke and dust be avoided. If even this door was an eyesore, and greenhouse plants were the chief object, you would scarcely want fire from the middle of April to the middle of October, and during that time you might sink a box with roots of ivy, and the tops trained to a flat trellis, so as to cover all over. Nay, even in winter, this trellis might be so hinged, and the plants so managed, that it would stand upright or lie flat, accordingly as you wanted to open the door or keep it shut.

If, however, there be some insuperable objection to having the stock-hole outside, then the next best thing to do will be to sink a place deep enough for the furnace, that the fire bars may be at least eighteen inches below the bottom of the flue; have the entrance fitted with a door that will shut very close from being wadded on its edges; keep this door shut at all times, even when putting fire on, or lighting one, never opening it unless when going down or coming up; and let the air in the stock-hole, for enabling the fire to burn, be obtained, *not from the house*, but by means of a drain, or large pipe, communicating freely with the external atmosphere; but avoid all inside fire-places if possible.

5thly. *Position of the Flue.*—“I intend the flue to run and return along the east side.” There is, so far, wisdom in this, as you will have the greatest amount of heat on the coldest side of the house. This, however, so far as the east side is considered, definitively settles another question. “Whether should I plant the vines, inside or outside?” as supposing that your flue, as respects its going and returning branch, were a few inches separate, there would not be beneath your shelf a sufficient width to allow of vines being planted between the flue and the wall. I have no doubt but that the mode will answer, but this would be better promoted by having two or three dry drains across the house, one of these being open on the west side, and the other between the flue and the wall on the east side.

In something of a similar manner, Mr. Lane heats, very successfully, a very large house for Roses, and obtains, Polmaise fashion, a good circulation of air. Without something of this sort, some of us old gardeners have a prejudice to the having the heat equally diffused at once, such as taking the flue round such a span-roofed house. But here would be the bother of sinking under the doorways. This might be avoided by taking the flue round the *centre* of the house under the platform. You would see how I heated a small house by taking a flue *underneath* the floor, or pathway, and one a little wider, taken under your pathway, covered with paving tiles, would answer completely in your case for greenhouse plants; but, if you contemplated anything like forcing Grapes at any time, you must not bury the flues. The advantages of sinking them in a small greenhouse are, that they present no eyesore, come in the way of nothing, are just as easily cleaned, and burn as well, if care is taken to keep water from sinking in them. For a large house, or when a strong heat is necessary, it is advisable to have them above ground.

6thly. *Taking out the soil of the house three feet deep, filling with stones, rubble, &c., and then paving.*—I can, in no case, see either the utility or the economy of this contemplated labour. If kiln-burnt paving-tiles are used for flooring, they can never be laid better than on the solid ground, with a layer of thin mortar, or an inch or two of dry sand beneath them. If slabs of stone, or slate, are meant, they may either be laid in a similar manner, or, to keep them hollow and dry, fixed on dwarf brick walls two or three courses in thickness. If it was ever intended to plant vines inside they could get no benefit from such stones and rubble. Besides, after

considerable experience, I have no preference for having such a house all floored over, either with tiles or stones, although some very able gardeners prefer having their houses so done. I would confine the paving and stoning to the pathways, in all cases where there is a platform and shelves, just because it is so much easier to keep a bed or border neat or clean than a quantity of paving. It is no joke keeping the latter from getting green and dirty by means of soap and scrubbing brush, though the most effectual remedy is a solution of soda. A few spadefuls of sandy earth thrown on your borders, and neatly raked, makes them always look neat and fresh. I would act, therefore, differently, if I removed such a depth. I would run a drain through the centre over that; and for the width of the house, I would place a foot of rough rubble, of any come-at-able substance, and over that I should fill with good mellow loam, and then I might plant out climbers, vines, &c., inside, with the certainty they would do well whenever I chose to try them.

Did the flues run on the east side, as proposed, the vines might be planted on the west side, or even in the middle of the house, and then be trained both ways; or, if the shallow flues went, as mentioned above, beneath the paths, the vines might be planted on both sides, as the bottom of the flue would not hurt the roots, the chief heat being on the surface; and in either of these cases, the vines would be next to independent of any outside border.

7thly. "*Whether should I plant the Vines, inside or outside?*"—Both, as has been seen, are equally good, if properly done. If planted inside, the stems are neither twisted, nor exposed to frosts, and the roots inside, at least, are saved from low temperatures. Planted in the middle of such a house, fourteen feet wide, we should care nothing about the roots going outside at all, if the inside border was properly prepared. If planted in a small border inside, close to the side walls, these walls must be on arches, to let the roots freely out. But here one thing is essential, your outside border should not be higher than the inner one, or the vine roots will get unduly covered. By planting outside, you may raise the border close to the wall, as near to the glass as you please, and thus give it a good slope to the morning and afternoon sun. In such a case, the border should be at least six or seven feet wide. Properly drained, the vines will do well on the level, if anything like a bank against the house is not desirable; but dryness is more easily obtained if the border slopes.

8thly. *Ventilation*.—Of course you could not slope the border much if the front ventilation was to be in the side walls of two-and-a-half feet in height. Front ventilation may thus, however, be well secured; and if the flue runs near the wall, the air would be heated before dispersing among the plants in winter. Your object, we presume, is to have your front sashes a fixture. We also perceive you wish your roof-sashes to be fixtures; and by means of opening the doors, and throwing in a great body of air at the apex of the roof at the two gable ends, I think you will manage, if you have no partitions. But with a partition, the heat would unduly accumulate there, and you would either require to have a thorough draught through, or some of the sashes be made to move, or some of them made shorter, and so as to abut against a glazed or wooden ventilator in the apex, hung upon pivots, and made to open or shut easily. Supposing you have a partition, either of these last modes would be better than having a draught through all the top of the house, as this would interfere with keeping each division in the very condition you might require. If the roof on each side was in two divisions, the upper sash small and moveable, it would be best of all, and then you could dispense with opening the gable ends altogether.

9thly. *Size of Squares of Glass*.—This is matter of taste and economy—eighteen inches by from seven to ten, are good sizes; when larger, a break is a smash.

10thly. "Should I *putty* the laps?" Decidedly, No; unless you secure the most efficient ventilation, and even then we see no utility in the practice if the glazing is well done. The weather and dirt will soon putty them.

11thly. "If the roof is merely at an angle of from 30° to 35°, will not rain and wind drive in?" We presume that you mean because it will be so flat. I have reserved this inquiry for the last. It is quite evident our present inquirer entertains the same views with respect to the angles of a roof, as another correspondent referred to elsewhere. In other words, both have taken the French instead of the English mode of computation. I have no prejudice myself, but I think it is time that our coadjutors, and other gardening writers should decide definitively on the subject, as the roof our friend speaks of I suspect to be identical with what I should call an angle of 60° or 55°, the latter of which will answer very well for general purposes, as he will be helped by the upright glass in winter, and spring, and autumn. A rise of another foot in the roof would be favourable. In our younger days we never heard of this other mode of computation, but now it requires one to study the context to see what is meant. The height of our friend's house supplies us in the present case, as we can judge how much the apex of the roof is above the plate on which it rests. Now, until advised to the contrary, I think the old English system the best. The angle of the roof we speak of is merely that enclosed between the sloping roof and the perpendicular wall of a lean-to, or the imaginary perpendicular between the two slopes of a span roof. Now, we speak as if the more upright the glass, the smaller, consequently, the space between the sloping line and the perpendicular, the smaller would be the figure of the angle; but some of our friends compute very differently; so that what I would call 10°, they would call 80°, 90°, 70°, and so on, until we happened to be alike at 45°, and then to diverge just as much again. This happens from computing from different sides of the quadrant. For example, take or make one of these articles, board or pasteboard will do, in the corner, opposite the arc of 90°, fix a string, with a weight at its end, that will pass beyond the graduated arc. Place the side of the quadrant, nearest the figures 1, 5, 10, &c., on an equal line with the slope of the roof, and the weight will hang the string at the figure representing the identical angle, from 35° in an early peach house to 80° in a flat garden frame. But place the other side of the quadrant, nearest 90°, against the sloping roof, and your plummet line will give 55° for your early peach-house, and 10° for the common garden frame. Now this, without much study, will show how the difference happens. Cannot a universal plan be adopted. What say the editor and contributors?

R. FISH.

THE CARNATION.

(Continued from page 101.)

PROPAGATION.—There are three modes by which the Carnation can be increased, namely, by Seed, by Layers, and by Pippings, or, more correctly speaking, by Cuttings. The first is practised with a view of obtaining new and improved varieties, and the two latter to propagate them when obtained.

By Seed.—The single flowered Carnation being in the condition in which it grows wild, with all its parts complete, produces the best and most perfect seed; but then it is useless to the florist, for double flowers only are valued by him. Now, as like generally produces

like, so single flowers will, in a hundred cases to one, produce single flowered offspring, and, therefore, the florist, being so taught by experience, saves his seeds only from double flowers, or those that are nearly so. A perfectly double flower cannot produce seed; to do so it must be only partially so, and the seed pods will be shorter, and the seeds fewer in such flowers than in single flowers. Hence, seed so saved is very valuable, and few florists will part with it. Even the most carefully selected seed of this flower is very uncertain in its progeny. Nature is ever striving to regain its wild state in all flowers, but more especially in the Carnation and Picotee. Many hundreds of seedlings may be raised every year, and nine-tenths of them will be useless as florists' flowers. Still, some few will come perfect, and, therefore, the most simple grower need not despair. Let "perseverance" be his motto, and success will eventually ensue and reward him abundantly for his trouble. Save selected seed from as double flowers as possible; gather it as soon as it is ripe, and keep it dry and cool through the winter. Sow in boxes in March, placed under glass or on a warm border. In April, transplant the seedlings on a bed enriched with leaf mould, or very decayed hotbed manure, as soon as they are large enough. Plant them nine inches apart, and let them remain on that bed through the succeeding summer and winter. They will all flower the season following. Mark such as are good, name them, and layer them in the way I shall describe presently. Afterwards treat them exactly like your old favourite good varieties.

By Layers.—A layer is a branch, or shoot, brought down to the ground, and when rooted, separated from its parent. It is then a distinct individual, though exactly like its parent. Carnations, Picotees and Pinks, in order to produce perfect flowers, must be young plants every year. The old plants, if any are left alive, are only fit for the borders as common flowers.

The mode of layering a Carnation or Picotee is well known to every florist of any standing, but for the sake of new beginners I will briefly describe it. The materials wanted for the operation are a sharp small knife, a quantity of hooked pegs (the fronds of the common brake or fern are the best, though they may be made of birch or hazel), and some finely-sifted soil. These should all be ready by the time the shoots round each plant have made five or six joints, or pairs of leaves. Choose a dull, cloudy day on which to perform the work, or if the plants are in pots, under an elevated awning, they may be layered in any weather. Commence by taking hold of a shoot, and trim off the leaves from the bottom, leaving the two uppermost on and entire. I do not approve of the old method of shortening the leaves that are left on the shoots, for I consider the cutting off a portion of the leaf is positively injurious, and hinders the layer from rooting so soon as it otherwise would if the leaves were left entire. I have proved this repeatedly, and always with the same results.

Trim off the lower leaves on every shoot before layering one, because when a layer is tongued it is easily broken off. When this is done, take hold of the shoot, turn it up, and pass the knife blade through the third joint upward, commencing the cut just below it; then put down the knife, and reach a hooked peg; thrust it into the soil, catching hold by its hook of the layer as it descends, and press it gently down to the soil. Do the next in the same manner, and so on till every shoot is layered; then cover them all with the sifted mould, about three-quarters-of-an-inch deep, and that pot, or plant, is completed. Then give a slight watering, and the layers want no further care till they are rooted, which will be in about a month or six weeks. Examine them occasionally, and, as soon as roots are emitted, pot them off into five-inch pots, a pair in each; or if your space is limited, and the layers small, three may

be put into each pot. Dealers always put them in pairs, because it is almost an universal custom to sell them by pairs. After they are potted they should be placed under glass, in a cold frame or pit, plenty of air given in mild weather, and shelter from severe frost when it occurs. Very little water is required through the winter months, and the air in the frame should be kept as dry as possible. Should damp prevail, the plants, some fine day, should be taken out, and a coat of fine, dry coal ashes spread over the surface. The plants should then be replaced in the pit. These dry ashes absorb the atmospheric moisture which otherwise would settle upon the foliage, and cause the disease called the spot.

By Pippings.—Carnations may be propagated by this mode where there is the convenience of a gentle hotbed. It is, however, not so safe as layering, but where there are more shoots than can be layered, and it is desirable to propagate largely, the superfluous shoots may be piped. Take them off, and cut off the lower part off the shoot up to the third joint, trim off the lowest pair of leaves, and pass the knife just through the joint. Prepare a pot by draining it, and filling it with the proper compost up to within an inch of the top; fill that with silver sand, water it gently to make it firm, and then insert the pippings all round it close to the pot sides; place them in a gentle hotbed, shading from the sun. Watch them daily, and supply water when the sand becomes dry. When they are rooted, which they will show by sending up fresh leaves, pot them in pairs, as directed for the layers, and treat them in the same way. *Picotees* require exactly the same treatment in every minute particular.

T. APPLEBY.

(To be continued.)

LYCOPODIUMS.

(Continued from page 82.)

CULTURE IN A WARDIAN CASE.—There are no plants, not even excepting Ferns, that thrive so well in a close glass case as Lycopods. After all that has been said and written about suitable plants for these drawing-room greenhouses, there are very few plants that will live any length of time in them. I may venture to claim some credit for knowledge on this point, for whilst at Pine-Apple Place I had to furnish with plants great numbers of them, and my experience warrants me to assert, without fear of contradiction, that, excepting *Ferns* and *Lycopodiums*, no plants will exist satisfactorily more than six months, and great numbers that I tried did not live half that time.

The great cause of failure no doubt arose from the want of fresh air, and a too moist atmosphere. The plants, excepting the two tribes mentioned above, always became covered with mould, and, in consequence, perished.

To grow well even *Lycopods* and *Ferns*, I would recommend the upper squares to be hinged, so that, when the air becomes foul, or too much heated, the squares can be opened, and the plants relieved. If one of the ends, also, is made to open, it will cause a freer circulation of air, and the plants will be the more benefited thereby.

Pure air being provided for the plants, the next important thing is *soil*. This should be of an open texture, to prevent stagnation of water, and to allow the air to reach the roots, for it is a well-proved fact that roots will perish if totally deprived of atmospheric influence. I always used very rough peat, generally such as would not pass through a quarter-inch meshed sieve. This I mix liberally with silver sand, but, where this cannot be had, river sand will answer the purpose. To this I added some chopped sphagnum, and mixed the

whole well together by frequent turnings and mixings. It then presented an open, light appearance, and any one at all acquainted with Lycopods would have said they were sure to thrive in it.

Wardian cases have, or should have, a box to rest upon, six or seven inches deep. This is generally made of zinc; very ornamental ones are cased with mahogany, and have four feet of the same material. I have seen one made in the gothic style, with pointed windows, or rather roof, and glazed with diamond-squared glass. It was intended to stand in the hall of a mansion, or rather castle, built in that style. It was a very noble case, and cost fifty guineas. Whether the plants grew well in it or no, I never learnt, but I think they could not fail, especially if planted with Ferns or Lycopodiums.

This box should have a thin layer of drainage over the bottom. If that is not cased with wood, this drainage should be of some light material, or it would bulge it. I generally used pumice-stone, which is both porous and light, and the roots of the plants seemed to like it much, for they clung to it and penetrated into the hollows abundantly. Upon this drainage place as much of the compost as will allow room for the balls of earth when the plants are turned out of their pots.

The glass covering should, in all cases, be moveable, in order that the planting may be properly and conveniently performed. Place the tall growers in the centre, and the low ones on each side and ends, press the soil gently to each plant, and give a good watering; then allow them to stand without the cover for two or three hours, till the foliage is quite dry, and the surface of the soil partially so; replace the glass, and set the case in the place it is appointed for.

As these plants are mostly from warm climates, the case should stand in winter in a heated apartment. The heat need not exceed 50° or 55° during the night, nor more than 60° during the day. In summer they are sure to be warm enough, even without artificial heat. They require very little attention, and but seldom watering. Should they appear to grow fast and weak, give plenty of air, but as this will carry off the confined moisture, they will require a little more water, just sufficient to keep the soil moderately moist. Occasionally allow the surface to become dry, and then stir up the soil slightly between the plants, but be careful not to disturb the roots. Take this opportunity to pluck up all weeds that may appear, and to remove every appearance of mould and every decayed leaf. Should any plant appear to grow too fast, so as to overshadow its neighbours, prune such into proper bounds, and should any die, replace them immediately.

By attending to these particulars in due time, the plants may be kept alive and healthy for at least twelve months. Wardian Cases are most useful in large, smoky towns, and the plants will grow well in such a situation, because the glass shade protects them from the baleful influence of smoke. The following are a few additional species to the list already published in THE COTTAGE GARDENER.

Lycopodium plumosum (Feathery Lycopodium).—A beautiful species, with the branches and foliage arranged flat, something like a feather.

Lycopodium umbrosum (Shade-loving Lycopodium).—This species is also very handsome, the fronds rise up straight, and then spread out flat sideways; one frond spreading out one way, and another the contrary. It is well worthy of cultivation.

Lycopodium Willdenovii (Willdenow's Lycopodium).—Very dark green finely divided foliage. One of the handsomest of the whole genus. It is remarkable for not putting forth roots above the soil. It must be increased either by cuttings or division.

T. APPLERY.

THE EVILS OF TILLING GROUND WHEN IN A WET STATE.

ALTHOUGH it would be preposterous to say that rain does not convey a vast amount of fertilizing matter to ground in tillage, yet there are certain periods in which the latter is not in a condition to benefit by this "natural top-dressing;" for, although it be true that rain can hardly come wrong to vegetation which is purely in a state of nature, yet, as many of the productions we hold in most estimation, are in themselves the results of more or less of artificial treatment, we may be excused for regarding them as differing much from other things purely in a state of nature, or, rather, of wildness.

Now, as the rain falls in equal quantities both on the cultivated and uncultivated ground, as well as on the crops that each are producing, it behoves us to enquire under what conditions we are to place the cultivated portion, to enable it to derive all the benefit it can from this source of fertility, as well as to preserve it from such injuries as its altered circumstances from its original wildness has rendered it liable to. In this respect it is somewhat difficult to do always all that is requisite; because, with all the prophetic knowledge that Moore, Murphy, and others have endeavoured to instil into us, we are not yet in a condition to foretell, with anything like certainty, what sort of weather the ensuing day is likely to exhibit, consequently, we are not in that position for making our arrangements to mitigate the evil, or increase the good, which a copious rain usually imparts. But though our ignorance of coming events may form an excuse for our deficiency in the proper precautions, it affords no apology for our doing what is positively wrong; besides which, a little observation of the passing changes of temperature, &c., coupled with a little instructive knowledge derived from other sources, gives some parties a something more than "hap hazard" way of judging of what "to-morrow," is going to bring forth.

Now, in the cultivation of the soil, it is not saying too much to affirm, that very often there is a positive injury done by an operation being performed at the wrong time, or in an improper manner, and in nothing is this more manifest than in digging ground when it is saturated with wet. In this condition it is, in the first instance, compressed by the feet of the workman treading over every inch of it, and the spade or other tool finishes the work of consolidation, by turning up the lumps of prepared dough or mortar in such a way as to give each that glazed appearance which prevents the ingress of air, and compels what evaporation does take place, to do so by the half-sealed-up channels, which are all but proof to its receiving any fertilizing agent in return.

There are some soils which may, without any great mischief, be worked at all times; but there are others which, by their composition, must be treated with more caution, and to them we now draw attention, especially as they are the more numerous, if not also the most useful, soils we have. True, they will in time recover, but their recovery is a matter of time, and if it occurs at a season when such delay cannot be afforded, the evil becomes the more apparent. We know there are many garden soils of a kind that ought not to be meddled with when wet, and to such of our younger friends as have such soils to manage, we urge on them not to attempt it, and more especially so neither in spring or summer; for, though it will do harm at other seasons as well, yet at these the delay necessary to bring the soils round again into tilth cannot be spared without an unequalled loss of the best portion of the growing season. We, therefore, say, wait a day or two, and take the advantage of such fine days as do occur to turn up your ground; and though, with the scanty

knowledge of agricultural chemistry which the most learned only possess, we are not in a position to say precisely how much injury a succession of heavy rains does to a stiff, retentive soil, when its outer surface presents so easy an ingress, and its substratum so difficult an escape, for the want of proper drainage, &c., yet it is easy to foretell the evils which must result from a soil compelled to part with all its superfluous waters by evaporation only, or nearly so.

The trampling of ground, when soddened by wet, has a soddening effect, and some are so imprudent as to do this in the thinning of their seedling crops, or in the planting out of others. Surely there may be much done by judiciously selecting the proper time for each operation, and if out-door work has to be performed when the ground is saturated with wet, there are other duties which may as well be performed then as at any other time; the rolling and mowing of grass plots might be proceeded with, and the turning and preparing of dung, &c., for hotbed purposes; nay, even the very walks themselves might be rolled if they do not stick to the roller, and many other duties which will easily present themselves to the attentive observer in such a way as to enable him to arrange his work accordingly, without inflicting on his tillage-ground the mischief which must ensue if trod upon when in a very wet state. It is not too much to say, that with certain lands, and in certain seasons, such bad treatment is felt throughout the year; for if the soil be so compressed and consolidated at the time of digging, it turns up as stubborn as if it were clay, and the solid mass, refusing access to the kindly influence of the air, remains in that hardened condition until the long-continued action of the atmosphere has again returned it to something like its former friable condition. But this is attended with a loss of time which cannot be well spared, and though it would be wrong to say that no progress was made by vegetation during this period, yet such progress has been far short of what it would have been under more favourable circumstances. The present season is certainly not one in which the ground works pleasantly, under the most favourable circumstances; but its tenaciousness need not be aggravated by working amongst it as if it were intended to make bricks of it.

At present the *walk edgings* must be looked to, and, if needs be, fresh ones laid, and moist weather is the best for such work;—if the edging be of Box, it will want cutting-in every year, and the present, or a week later, is not a bad time for it, the moist weather so quickly inducing a fresh growth, that before the dry weather sets in to brown it, a good spring growth probably will have taken place again, sufficient to cover all the cut leaves and other unsightly parts. This is not altogether a mere matter of form, for Box edgings require cutting or clipping every year, and there is no time better than when the summer shoots have advanced a little (say half their length), provided the weather be showery at the time, for everything depends on its being done so, and as the season, up to the period at which we write (the 30th), has been unusually moist, the growth has been quite equal to the average of seasons.

The damp weather, too, is favourable to the breaking up and laying down of any *old walk* requiring it; and as there is a probability of its being fine and dry hereafter, such jobs as can be most advantageously done while it is wet ought to be got on with at once.

While we condemn the treading or digging of ground when in a wet, sodden condition, we hardly need remind the amateur that the most of it dries very speedily at this season, and the sooner the operation is done after the ground will allow it, the better, as the beneficial effects of drying wind and bright sunny days accelerates the process of pulverizing the soil much more rapidly

now than the changing weather of mid-winter, not even excepting hard frosts; for, although the latter will reduce the stiff, retentive lumps to a state of comparative firmness, we are far from certain whether the objects aimed at, *i. e.*, increased fertility, be attained so well by a winter as by a summer's tillage, even should the latter be only for one-third of the time; but more of this anon.

J. ROBSON.

SWEDISH TURNIP CULTURE.

THE preparation of the land for Swedish Turnips is a matter of the highest importance, and must, certainly, be considered a subject which ought to rank first amongst all agricultural operations, for in the four-course rotation, on the cleanliness of the Turnip fallow, will, in a great measure, depend the productiveness of the succeeding crops.

With regard to the Turnip itself, if the land is not well prepared, it cannot be expected that the crop will receive the full benefit of the manure applied; and, however important manure may be considered towards raising a crop of roots, yet the mode of preparing the land, is, perhaps, of still more importance. I consider the obtaining a plant of Turnips to be of the first consequence; and I think I may venture to say, that the chance of a full plant, in the majority of seasons, is more dependant upon tillage than upon manure.

Past experiments, and my own experience, induce me to believe, that the Swedish Turnip requires a different culture and state of the land from that necessary for the growth of the varieties of common Turnip; I, therefore, treat only of the preparing land for Swedes upon this occasion, and intend making the tillage for common Turnips the subject of a separate paper at a future time.

The necessity for treating the subject in detail becomes apparent, when we know that a majority of farmers consider a great deal of ploughing, and other labour, is necessary to produce a crop of Swedes, whether the land is clean, or otherwise. Indeed, until within a few years past, the impression seems to have been almost universal, that the preparation of the land for this crop is an expensive operation, which cannot be avoided under any circumstances.

I, therefore, shall treat the subject under two separate divisions.

First. The tillage of land, when foul, and infested with twitch, or couch grass.

Second. The tillage of land, when clean, and free from that weed.

The preparation of land for a crop of Swedish Turnips, when in a foul state, of necessity involves a course of autumn tillage, which should be commenced the first opportunity after harvest, by scarifying the land a sufficient depth, to remove the grass, weeds, and stubble, which, after being separated from the soil, by the use of the harrow, roller, &c., should be collected and burnt, if dry enough, but if too wet for burning, be carted away to a heap and allowed to rot, when they will become useful for many purposes. The land should then be

ploughed twice, to a good depth, and each time rolled and harrowed sufficiently to eradicate the grass and weeds, which should be burnt, or carted away, as before mentioned, taking great care, during the whole course of tillage, not to plough, or work the land whilst it is wet, or during unfavourable weather.

The ground should now be ploughed into stretches about two feet apart, which will leave the largest surface exposed to the favourable influence of the alternate frost and rain peculiar to the winter months.

In the early spring, upon the arrival of favourable weather, and when the land becomes dry and white upon the surface, commence with tillage, preparatory to manuring and sowing. It will now depend upon the system of culture to be adopted as to the mode of proceeding with the tillage; two systems are advocated by different parties—drilling on the flat, and also drilling on the stretch, commonly called the “Northumberland ridge culture.”

I believe both these to be well adapted for the growth of Swedish Turnips, but I think we should be guided in our choice by the nature of our soil, and the climate, and situation of the land. I consider that ridge culture is best adapted for a kind soil, and the climate of the northern and western counties of England, where a greater portion of moisture falls, which is essential to the favourable growth of this root; in which case, the land will nearly always be found sufficiently moist to vegetate the seed upon the ridge; and in seasons of excessive wet the land will lie much drier.

Upon the other hand, I think the cultivation on the flat best suited to the dry climate and unkindly soils of the eastern and southern counties of England, because the seed will vegetate with a less kindly surface, and a small amount of rain will suffice to keep the plant alive until the arrival of the periodical and autumnal rains.

If the ridge-culture be selected, proceed to split the stretches with a double mould-board plough, and allow it to remain in this way until the weeds make their appearance, then, if it is intended to manure with yard or town manure, let carts pass along the furrows laden with manure, two men casting out such a quantity as may be deemed sufficient, and three women, or boys, following, to distribute it equally in the furrows. If artificial manure is used, let the guano, or any manure rich in ammonia, be sown broadcast on the stretches, taking care to have damp ashes mixed with the guano, or any other manure in a dry state, to prevent its flying before the wind; after which, whether dunged, or artificially manured, the ridges should be made up in their proper form. The manure will then have been buried a good depth in the centre of the ridge.

The land may now be seeded, and such manures applied by the drill as may be decided upon; but I think, in all cases, two-hundred-weight of superphosphate of lime, mixed with a portion of ashes, is desirable, in order to force on the young plant out of the reach of its numerous enemies.

When the flat, or level culture, is chosen, commence

the spring tillage by harrowing the stretches crossways, until quite level, having the roots of grass and weeds which may be found alive picked off; after which, allow it to remain until the weeds make their appearance, then proceed to cart out the manure, spread in the ordinary way, and plough it in; if yard or town manure be used, take care to have it previously well prepared, by turning and mixing, in order that it may bury with the plough more readily.

In case guano is used, let it be sown broadcast, and ploughed in, for when sown upon the surface after ploughing it makes the weeds grow most rapidly, increasing the expenses, injuring the young Turnip, and exhausting the manure, for the operation of the guano is not required by the Turnip until after the period of hoeing, particularly when an application (which is always desirable) of superphosphate, &c., has been made.

The land should now be sown with about three pounds of seed per acre being drilled, and with such manure as may be required at the same time, taking especial care that every ridge is seeded, as fast as it is ploughed, the advantages of which will be great—whether rain or dry weather succeed. The distance between the rows is very important. I think the best distance is twenty inches apart on the flat, and two feet apart on the stretch, taking into consideration the above-named circumstances. JOSEPH BLUNDELL.

(To be continued.)

THE LESSON OF GOD'S OWN TEACHING.

By the Authoress of "My Flowers."

(Continued from page 85.)

I now proceed to give the sequel of William Green's instructive history in the simple effective words of the narrator. Let it sink deeply into the heart and memory of every discontented spirit; of every one who is hewing out his own cistern; kindling his own sparks; going down to Egypt for help. Happy will it be if they stop before they have gone headlong to ruin!

"The time of William Green's departure being at hand, I went to pay a farewell visit to him and his family at their cottage. Miserable was the appearance of the house; wrapped in large bundles were the bedding and clothes they were required to take with them; while the absence of the scanty furniture, which had been sold, gave a desolate and chilling appearance to the whole household. Playing in the middle of the floor were the two youngest children—fat, hearty-looking little rogues, full of play and merriment, tumbling and rolling over each other in redundancy of health and joy. Poor little fellows! my heart turned sick when I saw them; and fancy painted the wretchedness of an emigration vessel, and the long and weary miles of ocean waste that must be ploughed before they reached their final port. Little did I then anticipate that before their journey was half accomplished, their little bodies, now so full of life and animation, would be sunk in the depth of the ocean, a prey to the monsters of the deep. The farewell was given, and I turned homewards, with a heart full of interest for the departing family.

"They went. Week after week passed away, and no letter was received from them. At length, after a long time, I recognised the hand-writing of my quondam-workman on the address of a foreign letter. The letter was, indeed, full of woe; and bitterly did poor Green deplore his untoward step; and well he might—for he left England with a wife and three hearty children, and he landed on a foreign shore a widower, with only one child.

"At first all had passed smoothly on, and the voyage, after

the few first days, was bright and prosperous, until symptoms of exhaustion evinced themselves in his wife, never a very strong woman; and unable, I imagine, with the hard diet of an emigration vessel, to afford her twins the nutriment they required, the two children consequently fell sick and died, one after the other, while the wife was daily becoming more and more emaciated, until death put an end to her sufferings; and Green landed, a desolate and heart-broken man, with an only daughter, a child three or four years old. Here, indeed, was a lesson to all discontented spirits; a lesson of God's own teaching; a moral, obvious to the most careless.

"The letter of poor Green was full of bitter complaints and repining. He was the most unfortunate of men—all his efforts and struggles were invariably unfortunate, and he met with nothing but disappointments, where others would certainly have succeeded." It never for a moment seemed to cross his mind, that his 'ill luck,' as he would term it, arose from his own unhappy disposition. He was utterly disappointed in the climate and country; and loud were his complaints against the writers on emigration, whom, he said, must have written on purpose to deceive; and now all his anxiety seemed to be to return to 'dear old England,' whose green fields and snug cottages he was sighing again to behold. He had met with great difficulty in obtaining suitable employment, and his favourite notion of cultivating the vine was not even alluded to. He had walked hundreds of miles to the Burra Burra mines, where he obtained casual work, but was suddenly dismissed, with many others, on some alteration of management. The last time I heard of him he was employed in a newspaper office, and was endeavouring to obtain a sufficient amount to bring him home. What effect the discovery of gold may have had upon his prospects, I know not; but I have little doubt his first impulse would be to rush away to the diggings; and I should not be surprised to learn that his career had been brought to an end in consequence, for his physical energies were never very great, and his constitution none of the strongest."

How many may take warning by the sorrows and disappointments of William Green. How many "have walked in the light of their own fire," and then *wondered* because they have "laid down in sorrow!" How many are now murmuring at the consequences of their own blind folly, and are "charging God foolishly!" Ah! "*He doeth all things well*;" with Him "is no variableness, neither shadow of turning;" it is not the Lord, but our own waywardness, that brings us into trouble. Let us go back, step by step, through all the events of our lives, and see if we cannot find out the *first* beginning of our "ill-luck," as we sinfully call it. Let us see if that first beginning was not some very foolish, obstinate, or selfish act, if not a very wicked and unholy one! What man does to us never hurts us; it is what we do to ourselves that works our ruin. A master may seem very grinding and oppressive; a relation may seem very unjust, harsh, and unfeeling; friends may deceive; promises may be broken; expectations altogether upset. But all this is nothing; we may trace and thread our way through all these things with ease; they are external disagreeables; they will rub off; they are but bruises; they will soon disappear; they are the light and gracious appointments of a Father's unerring wisdom and undying love; they will fulfil His will, execute His commands, convey the benefit, and correction, and chastening, and blessing, our souls require, and then they will depart, or be softened down into sweetness. But it is our own mad actions that do us harm; that put stumbling blocks in the path; that cause blains to break out that drain our strength and destroy our happiness. I will venture to say, without fear of contradiction, that *not one of us* have suffered either in mind, body, or estate, without having *ourselves* laid the first stone of our sorrow. I write feelingly, and I am sure candid minds will *read* feelingly too.

We may "wander up and down for meat, and grudge if we be not satisfied;" we may "make a noise like a dog, and go about the city;" but, depend upon it, we are no better than heathens in our hearts, and, like them, we shall be "laughed at" by the Lord. Our joints will wither; our schemes will be blown upon; and, like poor William Green, we shall "meet with nothing but disappointments where others would certainly have succeeded."

My dear readers! times, masters, parents, circumstances, may be very disagreeable, hard, and unreasonable; but, depend upon it, it is *not them* that mar your happiness. Look *deeper*, look nearer home, seek it in your hearts. And then look into the Word of God for instruction, knowledge, direction, and increase of wisdom. Seek the teaching of the Holy Spirit, and walk closely by the statutes and precepts of God. "Then thou shalt walk in thy way safely, and thy foot shall not stumble. When thou liest down thou shalt not be afraid; yea, thou shalt lie down, and thy sleep shall be sweet."

WHAT ARE SPANISH FOWLS, AND WHAT MINORCAS?

THE Bristol Agricultural Society have this year offered prizes, at their Poultry Exhibition, to be held in December next, for Spanish fowls, and a prize for Minorcas, black or brown. This is a question, therefore, in which the poultry-keepers residing in the western counties are peculiarly, or rather, I apprehend, exclusively interested, inasmuch, that I believe the name Minorca applied to fowls is only heard of in the West of England. If I am correct in my opinion, there are three varieties of Spanish fowls, viz., black with white faces, and blacks not white-faced, as well as pure white, and my belief is, that black Spanish (not white-faced) and black Minorcas (of the western counties) are one and the same sort of fowl. Being personally interested in the subject, as are several of my neighbours, I wrote to the Secretary of the Bristol Society, requesting him to inform me what distinction is intended to be drawn by the committee between black Spanish (not white-faced) and black Minorcas, to which he replied, "There is no such name as black Spanish in the prize list, and I believe it is generally understood that 'Spanish' means black birds with white faces. The judges, no doubt, will be able to distinguish between them and Minorcas." You will very much oblige, therefore, if you can enlighten me and my friends who are in the dark, what is the difference (if any) between these "two black birds?"

This has led me particularly to the consideration of the great want which at present exists of a proper and general understanding as to what are the *correct* names, and chief characteristics of the different breeds of fowls at our exhibitions, and that committees should be relieved from the necessity of stultifying themselves (for such is really in many instances the case) by offering prizes for they know not what, except a name, and also of perpetuating errors by adopting improper names, as in the case of "Cochin-Chinas"—for here I must observe, that common sense appears to me to dictate, that the proper name for a China fowl is a "China fowl," as an Englishman is an Englishman all the world over, come from what county in England he may.

I would suggest, that a prize list should briefly set forth what are intended to be considered the leading features or characteristics of each breed for which prizes are offered, which could (particularly if emanating from one of our leading societies) easily be carried out, and I feel satisfied that the principle, when once started, would be followed, and in the course of a short time bring about a clear understanding as to what really are the true characteristics of all the different varieties, and at the same time save much trouble and expense, as well as disappointment to exhibitors, since very great differences of opinion at present prevail even amongst "judges."—T. A.

[The Minorca fowl of the western districts of England is a bird somewhat lower on the leg, and of a rounder form than the Spanish; and the white cheek, the peculiar characteristic of the latter, is absent, the ear-lobe alone being of that colour. Were we to adopt your suggestion, and, banishing the terms "Cochin China," or "Shanghae," adopt in their place the appellation of "the China fowl," our difficulties would not be lessened—for other fowls, beyond the class thus designated, have been introduced from the Celestial Empire. Shanghae, we think, is the more correct term, as indicative of the district from which the birds in question have been imported.]

The addition to every prize list of a summary of characteristics and points of excellence of the different families and varieties of fowls, would not only be inconvenient, but, we may surely add, unnecessary in all well-regulated poultry societies.—W.]

TRAINING PELARGONIUMS.

Mr. Fish says, "he believes it is a very common thing for the same idea to strike different individuals at the same time;" yes: and for human nature, it would be well if, like him, people could thus happily acknowledge it. It is, also, sometimes felicitous, and not uninstrusive, I think, to record the train which led to the embodiment of an idea; how the arrival of one thought showed on the way for another, till the whole was grasped and arranged.

As an illustration, and not unseasonable, I am induced to forward you a contrivance I tried last year for the purpose of training *Pelargoniums*. I had, previously to it, used copper wire, first formed to a number of equi-distant loops or eyes, and then secured around the pots: a very good plan, as the eyes form a ready convenience whereby to attach either string, or zinc wire, as a means to bear down and secure the young, growing shoots of the plant in their desired positions. They were, however, not entirely satisfactory. Now, it happened that I had all the honours of *uncle* thrust upon me some months previous to a visit I paid to the place of my nativity, about this time last year; suspended around the neck of my infant niece, I found four jingling bells, situated at right angles, and attached to what they would have me imagine a piece of coral: at all events, the substance was *red* and *hard* enough. When I became sufficiently enlightened upon the matter of "teething," and was further led to consider it an instrument congenial to this process, the result on my part produced pity for my poor little niece's gums. Quite contrary to the inventor's intention, the bells were given a decided preference to on the part of the child, for this purpose: and when the "coral" end came uppermost, it generally was introduced to the eye! the sudden and repeated proximity to which, coupled with the violent and, luckily, ineffectual struggles of the child to introduce the four bells at once into its mouth, induced me recommend for so dangerous a toy the severe and ancient Hindoo rite of widowhood.

More particularly in London, one's vision becomes keen for observation. I have often thought it would be no very difficult matter to read the man and mind of any great or little unknown, by noting the shops or objects which most claimed his attention. For my own part, one of my predilections this way is given to gutta percha and India rubber, the utility and marvellous appliances of which appear to have no bounds. As I was narrowly scrutinizing a shop containing these articles in Bond Street, the very thing presented itself to my view: vulcanized India-rubber rings, for the use of infants when cutting their teeth, one of which was speedily transferred to an envelope, and on its way to Suffolk. The ring was of bad odour, but the smell soon disappears: good reports were told me of it by "mamma." Side by side with the vulcanized rings lay some of common India-rubber, of equal diameter, though much less in substance. Now, they were the suggesters of my *Pelargonium* trainer. Those rings would do capitally distended around and just under the rims of my flower-pots; answering better, and could be adjusted with greater alacrity, I thought, than the copper wire, so I bought a dozen at a venture.

On my return home, a few days after, I could scarcely allow myself time ere one was put in requisition, when lo! fated disappointment, the rings *should* have been flat-sided, and they *were* round. I had no sooner placed one in its intended position, than down it methodically slipped—a failure! Not quite so, however; the plan of adjusting with zinc wire strained over the face of the soil was resorted to, and thus retained in their places, the rings answer excellently. To this ring the branches can be tied down in any desired position.

To do away with a "forest of stakes" in training a flower is a great desideratum. If, for the furtherance of this project, there is anything new, or which you may think publicly recommendable in this India-rubber business, I send it for

good. The just symmetry of a plant is that most natural to its habit of growth, which, by timely disbudding, stopping, and judicious pruning, becomes perfected independent of *visible* subterfuge. But if plants are made to assume an artistic shape for fancy, allow me also to recommend the globe and pyramidal forms, with the smallest amount of *perceptible* extraneous aid possible to accomplish the object.

UPWARDS AND ONWARDS.

ESTIMATE OF POULTRY.

IN one of your contemporaries a letter appears, signed "*E. S., Enfield*," in which, after several very superficial observations on the properties possessed, and prices obtained for the variety of fowl known as "the Cochinchina," the writer expresses a hope that the nation will soon be restored to its reason, and the good old barn-door cock to his pre-eminence. Now neither of these views do I wish to quarrel with, but shall be content to leave the crusade in "*E. S.*'s" hands, that he may obtain the desired objects as speedily as he may find possible; but when he goes further, and describes the Cochinchina fowl as representing an ostrich in height, and a jackass in voice, I cannot but think he must have but a very limited and imperfect notion of what Cochinchina fowls—those of pure breed—should be; and I would suggest, that before "*E. S.*" again writes on the subject, he should take a tour, and pay a visit to some of the successful breeders and rearers of those valuable birds, to dispossess himself of the erroneous impression he is labouring under respecting them.

In the first place, "*E. S.*" pays but a poor compliment to those eminent persons who thought the Cochinchina fowl a fit present to be sent to our Most Gracious Queen; and also to the taste of Her Majesty, in allowing such monstrosities to have a place in the royal aviary.

As to the sums of money those birds realise, I cannot see why any one should object to their obtaining prices as relatively high as even horses, to which "*E. S.*" alludes; the real value of animals consists in their usefulness, and if it can be shown (which was the aim and object of the importers of those birds,) that they possess all the qualifications for producing more food in a shorter time than the other varieties, there is no reason whatever why they should not fetch a relatively high price; this, of course, apart from either fancy or taste, which no one will deny of its own capriciousness will sometimes startle the world by its exceptions.

The endeavour to exclude from our shores a breed of fowl which has already proved itself to be as useful as ornamental, and to substitute in its stead a greater importation of that which our ancestors would have considered a debilitating beverage called "*T*," which "*E. S.*" directs attention more especially to, is what no one but himself will be likely to sympathise with.

Being a lover of the Cochinchina fowl, and no very great friend to "*T*," perhaps may account for the observations I have here intruded on you.—W. V.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND

A MONTHLY Council was held at the Society's house, in Hanover Square, on Wednesday, the 4th of May.

FINANCES.—Mr. Raymond Barker presented to the Council the monthly report of the Finance Committee, and the usual quarterly statements of the accounts of the Society, from which it appeared that the general current cash-balance in the hands of the bankers was £3300. This balance included the Gloucester subscription, and £800 as the special balance on account of life-compositions. The Council adopted the recommendation of the committee that this special balance should be invested as permanent capital in the purchase of stock in the public funds. The Council also adopted the recommendation of the committee, that the directors of the county of Gloucester bank should be requested to act as the local bankers of the Society during the period of its ensuing country meeting.

LINCOLN MEETING.—Mr. Raymond Barker, Mr. Brandreth, Mr. Fisher Hobbs, Mr. Milward, and Mr. Brandreth Gibbs, having been appointed by the Council at the last monthly meeting to act as an Inspection Committee for personally visiting the sites and accommodations offered to the Society for the purposes of the country meeting of next year, the report of this committee was read and the various localities exhibited to the members on a large map, and plans of the city of Lincoln and its vicinity, furnished by the authorities. The Knight Worshipful the Mayor and the Town-Clerk of Lincoln, accompanied by the Hon. A. Leslie Melville, and Mr. Torr, the well-known agriculturist of that district, then appeared before the Council as a deputation representing the authorities of the city, and the gentry and farmers of the county of Lincoln, for the purpose of advocating the claims of that part of England for the country meeting of the Society; and the Earl of Yarborough, as President of the North Lincolnshire Agricultural Society, supported the memorial sent in by that body, strongly recommending such choice to be made by the Council. These gentlemen respectively having furnished to the members present every information required of them, they received from the President the best acknowledgments of the Council for the kind trouble they had taken in attending the meeting of that day. It was then resolved unanimously, on the motion of Mr. Raymond Barker, seconded by Mr. Fisher Hobbs, that the city of Lincoln should be the place of the country meeting of the Society, for the year 1854; subject to the standing condition, that in the course of a fortnight from that day the mayor, on the part of the authorities of that city, enter into the usual agreement with the Secretary of the Society, acting in the name and on the behalf of the Council, under the powers of the Royal Charter; that the offers and stipulations on which the decision of the Council had been made, should be guaranteed under their hands respectively, and the seals of their respective corporations.

COUNTRY MEETING OF 1857.—The Council then proceeded, according to established regulation, to determine the district for the country meeting to be held four years in advance; and, decided on the motion of Colonel Challoner, seconded by Mr. Milward, that such district shall be formed of the counties of Dorset, Somerset, Wilts, and Hants.

JOURNAL.—Mr. Pnsey, Chairman of the Journal Committee, reported that, should no unforeseen impediment arise to retard the publication of the number of the Journal now in the press, it would make its appearance early in June.

STEWARD OF IMPLEMENTS.—On the motion of Mr. Hamond, seconded by Mr. Brandreth Gibbs, Mr. William George Cavendish, of Burlington House, Piccadilly, was appointed the Steward-elect of Implements at the Gloucester Meeting.

JUDGES.—The Council decided that nominations by members of the Society, made for Judges of Stock and Implements for the Gloucester Meeting, should be received up to the 23rd inst., the day of the general meeting, and the whole list then printed for the inspection and remarks of any member of the Society, who should make application to the secretary for a copy of such list; the selection and appointment of such judges being made by the Council at their Monthly Council on the first of June—no exhibitor, however, of stock or implements being allowed to vote.

GLOUCESTER MEETING.—Mr. Raymond Barker, Vice-Chairman of the General Gloucester Committee, reported the favourable progress of the works for the ensuing country meeting, and the recommendation of Wednesday, the 13th of July, as the day of the Pavilion Dinner of the Society.

MOVING STRAWBERRY PLANTS.

As you have published a wish in THE COTTAGE GARDENER, that your readers would send you "drawings of the implements used in their neighbourhoods," I thought I should not be intruding if I send you a description of a simple contrivance of my own, which I have found to answer quite to my satisfaction in removing young strawberry plants, &c., to any part of a garden, with a ball to their roots, which I have found difficult by the ordinary means, with light soil. I have a board two feet wide, by five feet long, which fits the top of a wheel-barrow, and resembles a

brick-maker's barrow. This holds twenty-one tiles when laid out upon it. A trench is opened close to a row of plants; a tile is then put into the trench with one hand, and a plant pulled on to it with the other. The earth is then pressed with both hands, and then placed on the board. When the board is full, it is easily wheeled (or carried between two without the barrow) to the planting ground, where a trench has been opened four inches deep. The plants are then put into their places, and the tile withdrawn with great facility.—S. F.

ENDIVE.

FROM noticing so little of well-blanching Endive, I am induced to communicate to you that I have found the *Long-leaved Curled* the best for blanching, as it can be the more readily and effectually bound and tied, so as to resist the frost, wet air, &c., than the dwarfier kinds.

The transplanting should be finished before the commencing of the autumn frost, and to prolong the season a portion may be inserted in pots of what are called 24s, to be plunged in the ground for removal for protection from severe weather.—THOS. TORBRON.

TO CORRESPONDENTS.

** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

HASTENING THE YEW TREE (T. H. H.).—The surest way to hasten the growth of a Yew tree, is to open a trench all round it, as if for taking it up; and for your tree, a yard from the stem will be sufficient; the trench to be two feet wide and eighteen inches deep. This trench is to be filled with the very best *fresh* soil you can get, mixed with two barrowsful of very old rotten dung; tread it down firmly, and fork the ground between the trench and the tree, and pour four or five gallons of pond water on the loosened part every Monday, or once a week to the end of August; and that ought to make it grow so that you might "see it growing." There are ten thousand trees and shrubs in this country which stand in more need of all this than your Yew tree.

ANGLES OF ROOFS OF FORCING HOUSES (Scrutator).—We are glad you so fully approve of the gardening part of Mr. Fish's late article on Strawberries. It is always as well, however, to avoid a sweeping conclusion; for there was no want "of a geometrical and mathematical taste combined with the horticultural," when that gentleman spoke of a roof being flat at 80°, and steep at from 30° to 40°. You might have even saved yourself the trouble of drawing a quadrant, if you had reflected, that while on some parts of the continent the angle is calculated from the base line of the quadrant, it is always calculated from the perpendicular line in *this* country. At page 207, vol. ii., you will find the matter illustrated by diagrams by Mr. Fish; and at page 304, of the same volume, you will see an easy mode of setting, or calculating, instantly, the angle of any roof by the quadrant, and a line and plummet. A French, and a British gardening author, mean, therefore, quite a different thing by an angle of 80°. With them it would be very upright; with us, it would be as flat as a common gardening frame. The context generally shows which mode is adopted. For the sake of the uninitiated, we may mention, that a perpendicular height above the level of where the sash rests in front, equal to the width of the house, will always give an angle of 45°. When, upon our system of computation, we wish to make the roof at an angle of 30°, we must either raise greatly the perpendicular back wall, or lessen the width of the base line. To get the angle of 30° on the continental or French plan, we must just do the reverse. The roof would, in their case, be as flat as our 60°; while their 60° would be synonymous with our 30°. We regret there is not agreement—but it shows no want of taste, or knowledge either, to write of computations as generally established. Had it been convenient to have given a diagram of the house, as sent and mentioned in the article on Strawberries, the misconception would have been less likely to occur.

VARIOUS (S. E. L.).—Centre bed on lawn, consisting of a circle, and eight bent spokes proceeding from it; position sloping to the house. What to fill it with? Something low, and all about the same height. Say the centre, *White Verbena*, and the spokes of the wheel with four or eight different colours of the same plant. The side clumps fill, as before, with *Geraniums* and *Petunias*. But the half-moon shape will look meagre by the side of your elegant centre figure; circles would be better, or something more artistic. To hang from a basket, and take the place of a *Nemophila*: *Lobelia speciosa*, or *bellidifolia*, would do equally well from the balcony; or, on the latter place, *Anagallis Phillipsi* would be beautiful. An *Anagallis* is never seen in perfection unless when hanging. *Sedum acre*, many other *Sedums*, small *Helianthemums*, and the various kinds of *Vinca minor*, would grow among stove plants, under trees, and keep a green appearance.

KEEPING PLANTS IN A ROOM UPSTAIRS (A Clerk).—We are quite delighted with your enthusiasm, and have no doubt you will ultimately succeed; but do not attempt too much at once. Recollect that imperial Rome was not built in a day, nor yet in an age. You could keep a great many things in such a room, to be turned out-of-doors in summer; but as your chief aim seems to be to grow and keep the flowers *there*, we regret to damp your hopes; for you certainly could not grow many at a window, with or without a stand, if the window is only two feet five inches by three feet five-and-a-half inches. Read over what has been said to the "Engine-House Gardener," and you will perceive the importance of light. In fact, watering and feeding a plant, and keeping it without direct light, are just synonymous with feeding an animal, and depriving it of its digestive organs. Plants could not be kept growing, and healthy, at more than three feet from such a window; if within three inches they will be better. Two or three dozen of small plants might be kept on a table, or stand, in winter. To keep them from frost, move them to the centre of the room at night, or in severe weather. Have a wooden shutter for the window, and a cloth to throw over the plants in extreme cases. Commence with *Fuchsias*, *Geraniums*, *Cinerarias*, and even a small plant of your favourite *Camellia*. The *Cactus* you inquire about will do very well if you give it plenty of light in summer. See what Mr. Fish said the other week, and read the articles on the "Neglected Greenhouse," as the general hints will just suit you. For such a place, patronise light, sandy soil, and be rather shy in mixing up manure with it, until you have got more experience. You are quite right about the hot-water bottles; good large ones will answer capitally. We suspect you have got a ceiling of plaster between the slates and you, or you will be scorched in summer and chilled in winter. Could you have placed some large skylights in the roof? You could then do greater things, as your room would be almost as good as a greenhouse, and the cold you could shut out by single or double shutters. After keeping the plants in your room in winter, we suspect you would find no difficulty in thinning them out, and placing your best ones in other windows in summer.

VINES IN GREENHOUSE (Samoth Yellot).—Your Vines need more roots added to them, instead of root-pruning. It is a difficult operation to renew a bad border without taking up the Vines. Unquestionably the border is bad, and the Vines much below the fruitful point. When fruit-trees of almost any kind wear out, or become weak through bad root-action, they almost invariably wind up their labours by an effort at the extremities of the branches. You were not likely to get a "show" this season, after suddenly forcing them to the spur-system. Let side-shoots be reserved at about a foot apart; stop them at about five eyes, and continue stopping their laterals at intervals through the season, attending to former advices in *THE COTTAGE GARDENER*; also apply strong liquid-manure if a great drought should occur.

GRAPE BLOSSOM BECOMING BLIND (A. R. F.).—Your border is inside; surely the roots have lacked moisture, being over a hot chamber. Why apply 70° bottom-heat with so low an air-heat as 50°? The next season beware of your chamber; let Nature have her own way; the proper relation between top and bottom-heat will be tolerably well sustained without resorting to extreme measures. An outside border is a very different affair. As to those Vines newly planted, give them fair play; neither burn, nor starve them. Let their laterals ramble pretty freely for awhile. Take them in by all means directly, for fear of injury to the young spray if done later.

FEEDING BEES (An Inexperienced Bee-keeper).—"A swarm, of last year, was brought, in August last, a journey of sixty miles by railway, which caused the breakage of several combs, and otherwise so disturbed the hive, that the Bees were able to make a very small provision of food. They were blown down on Christmas morning, and the hive turned upside down, and again blown off the stand on the following Sunday. (Little care could have been taken to fasten them securely in their exposed situation.) They were then removed into a dark out-house, and a pound-and-a-half of honeycomb introduced into the hive. Subsequently, barley-sugar, according to *THE COTTAGE GARDENER* receipt, was given regularly, and the Bees still continue to eat it eagerly; but have become very numerous and industrious. How long should the giving of food be continued?" Until the Bees refuse to take it, for when a sufficient supply of food can be obtained abroad, they will have nothing more to do with barley sugar.

SPANGLED POLANDS (Bearded Poland).—"In a pen of Spangled Poland, would laced feathers disqualify? or, if two pens were equal in other respects, would the Spangled beat the Laced?" Laced feathers are constantly seen on Spangled Poland, especially on the wing-coverts; they certainly would not disqualify. Poland perfectly laced throughout, are rarely to be met with, but their owner might exhibit with confidence, provided all other points were right.

GOLDEN POLANDS (Ibid).—"In Gold Poland, ought the topping or crest to be as free from white feathers as possible? In Gold and Silver Poland, are light or dark-grounded birds considered most desirable?" In Gold Poland we have always wished to see the crest either free from all white feathers, or otherwise, entirely white, the latter, however, is of very rare occurrence. Many a bird, however, has been rewarded with a prize, whose topknot had a considerable admixture of white feathers. A main feature of excellence in both the Gold and Silver Poland, is the "clearness" of the ground-colour; bright orange-yellow in the first, and creamy-white in the second.

WEIGHT OF BANTAMS (Ibid).—"What is the store and show weight for the Gold-laced?" Gold-laced Bantams exceeding seventeen ounces in the male, and fourteen ounces in the female bird, must possess points of unusual merit to compensate for any excess over these weights. With regard to your *Shanghai* enquiry, you must first tell us the weight, shape, and colour of the hens with which you intend to place the cocks in question.—W.

ROOSTING PLACE FOR SHANGHAES (R. Bosworth).—Your roost 10 feet long, and 4½ feet wide, will not accommodate more than one cock and five hens, especially as you *must* have the nests on the floors. You will repent it, if you have the nests erected "on the top."

PANSEY CULTURE (M. C.).—The seed should be sown as it ripens, therefore, the time extends from the end of June until September. If you buy our 117th number, you will find an essay there on the culture of this flower. We cannot tell why you fail in growing *Marvel of Peru*, unless we are informed exactly how you treat it. Editors, unfortunately, have not the gift of *clair-voyance*.

MEDLAR BLOOMING BUT NOT BEARING (A Subscriber).—Your tree being in a rather moist, undrained soil, and shaded by trees, accounts for the unfruitfulness. Drain, and give more light.

CARROT (H. T. James).—The Carrot "shaped like a peg-top," and "much used in Belgium," is the Dutch Short-horn. If you cannot obtain it of your seedsman, apply to the Pomological and Horticultural Association.

PICKLED CABBAGE (Sarah).—To have it of a good colour and crisp, use strong vinegar, cold, and do not add any salt. To keep *slugs* from your seedlings, you must sprinkle quick lime about them frequently. Have some of the lime in a canvass bag, and shake this over the seedlings.

VINE LEAVES (A Gardener).—We cannot see any Thrips on the leaf sent. It has been scorched, and there are some indistinct symptoms of the mildew; but the latter is not decidedly apparent.

SHANGHAI HEN LAYING SOFT EGGS (A. B. C.).—Her egg-passage must be in a state of great irritation. Give her three or four pills, each containing one grain of calomel and one-twelfth of a grain of tartar emetic. Give her one pill every second day, and keep her on soft food and in a warm place.

DORKINGS WITH FOUR TOES (H. S. W.).—We cannot otherwise "come to the rescue" of your fine fowls than by advising you to continue to breed some as "Sussex fowls," by which name the four-toed are usually described, and rewarded among "Extra Stock." The purest Dorkings will, occasionally, throw four-toed chickens, and the only way in which you can avoid it as much as possible is to breed exclusively from five-toed pullets, and by another cock similarly characterized.

BEES (B. R.).—Will some of our readers say where a copy of the poem by Dr. Evans, entitled "The Bees," can be obtained. An answer to your other question next week.

GOLDEN POLAND EGGS.—Will W. W. Sims send us his address on a stamped envelope?

BRITISH WILD FLOWERS (G. T. H.).—If you require a good botanical work on these, buy Smith's *English Flora*.

PEARS CRACKING (M. R.).—As the soil is poor, this probably causes the cracking in the fruit of your Easter Beurré. Remove about six inches deep of the surface to the distance of four feet all round the tree, and fill the hole with a mixture of fresh loam and stable manure in equal proportions. Give frequent and very copious waterings over this during dry weather in summer.

BEES (Rusticus).—You may obtain, for half-a-crown, a copy of Gelieu's work, translated, at Mr. Miller's, bookseller, 43, Chandos Street, Trafalgar Square. The volume in "Chamber's Educational Course," entitled *Meteorology*, will suit you.

FUMIGATING A GREENHOUSE.—To effect this, M. S. obliges us with the following directions:—"Dissolve four ounces of saltpetre in half a tea-cupful of hot-water, pour it over half-a-pound of tobacco (the common kind will do); dry it before the fire, and when nearly dry set fire to it on an old dish in the greenhouse. It will moulder until all the tobacco is nearly burned up, and is most effectual in destroying the insects in one night. A greenhouse fumigated in this way scarcely ever requires the process to be repeated."

EGGS, BUTTER, AND MILK (Claude).—Can any one seriously argue that these are *not* animal food?

JOYCE'S STOVE (D. J. M.).—Never having used one, we cannot say how much fuel a small one will consume in ten hours.

NAMES OF PLANTS (T. M. W.).—The common Coltsfoot, *Tussilago farfara*. (J. P. O.).—*Hibbertia volubilis*, a greenhouse plant. (D. G. C.).—The white flower, *Curdamine trifolia*, and the other, *Epimedium alpinum*. (J. A.).—Your cuttings and bloom are of the double-blossomed Pomegranate, *Punica granata*; it is hardy.

BRAHMA-POOTRA FOWLS.—A Correspondent enquires—"Are the Brahma-Pootras a distinct family?" Having already expressed our opinion on this point we offer now no reply, but we shall be glad if some of our readers who know the fowls will give their judgments upon them.

DISEASED GERANIUM-LEAVES (Ellen Cox).—They are affected with the Spot. Keep the roots more active by *very weak* manure waterings, and the air of the house drier. See what is said at page 502 of our last volume.

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WEEKLY CALENDAR.

M D	W D	MAY 26—JUNE 1, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
26	Th	Bedford Blue; clover.	29.850—29.790	54—49	N.E.	35	56 a. 3	58 a. 7	morn.	18	3 17	146
27	F	Ven. Bede. K. HAN. E. 1819.	29.902—29.875	54—47	N.E.	11	55	59	0 15	19	3 10	147
28	S	Brown Swift; meadows.	29.844—29.779	57—46	N.E.	03	54	VIII	0 50	20	3 3	148
29	SUN	1 SUN. AFTER TRINITY. K. CHAS.	29.689—29.611	51—35	N.E.	25	53	1	1 16	21	2 56	149
30	M	[II. REST., 1660.	29.763—29.686	57—38	N.W.	01	52	2	1 37	22	2 48	150
31	Tu	Mocha; woods.	29.847—29.795	60—34	W.	—	51	3	1 53	23	2 40	151
1	W	Small Tortoiseshell; lanes.	29.889—29.819	60—48	W.	07	49	4	2 m 9	24	2 31	152

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 68.7° and 45.4° respectively. The greatest heat, 91°, occurred on the 23th in 1847; and the lowest cold, 36°, on the 30th in 1835. During the period 117 days were fine, and on 65 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 93.)

FUMARIA: Fumitory; Smoke-wort.
GENERIC CHARACTER.—*Calyx* below the fruit, of two opposite, erect, acute, small, membranous, deciduous leaves. *Corolla* oblong, tubular, gaping, with a prominent palate, closing the mouth. *Petals* four, more or less combined; *upper lip* flat, blunt, notched, bent back; its base prominent, blunt, constituting the *nectary*; *lower lip* like the upper, sometimes with a similar prominent *nectary*, sometimes only keeled, at the base; two interior *petals* alternate with the two lips, narrow-oblong, slightly connected by their callous tips. *Stamens* two, with awl-shaped, flat filaments, shorter than the corolla, one within each lip. *Anthers* roundish, three terminating each filament. *Germen* roundish or oblong, compressed, pointed. *Style* terminal, short. *Stigma* compressed, of two flat lobes. *Pod* roundish or oblong, of one cell, with one or many polished, crested seeds.
FUMARIA OFFICINALIS: Common Fumitory; Purple Fumitory.



Description.—It is an annual. *Root* tapering. *Herb* milky-green and smooth. *Stem* much branched, enlarged at the joints, spreading, often recumbent, leafy, angular, various in luxuriance. *Leaves* rather fleshy, mostly alternate, twice or thrice leafleted; leaflets wedge-shaped, with flat spear-head segments. *Clusters* of flowers opposite to the leaves, stalked, erect, many-flowered, rather scattered. *Bractes* spear-head-like, acute, not half the length of the *flower-stalks*, especially when in fruit. *Flowers* rose-coloured, or pale-red, deep red at the summit, with a green keel to the upper and under *petals*. *Spur* very short, rounded. *Calyx* coloured, toothed, deciduous. *Pod* globose, a little compressed, abrupt or notched at the extremity, so as to be inversely heart-shaped; its surface smooth; valves united, not splitting asunder. *Seed* solitary, blackish, globose.

Places where found.—Very common about hedges, and near paths in cultivated ground.

Time of flowering.—May to August.

History.—Its Greek name, and the name bestowed upon it in every European language, agree in considering that it is so called because its juice causes the eyes to water as when they are exposed to the action of smoke. The genus is included in the Diadelphia Hexandria class and order of the Linnæan system. The flowers of *F. officinalis* are sometimes purple, and, as Parkinson observes—"in the corn-fields of Cornwall this beareth white flowers," but such whiteness is not confined to that county. Turner, our oldest herbalist, says—"The juice of this herbe, which indeede is sharpe, maketh clere eyes and teres to come furth, wherefore it hath the name. Layed to with gumme, it will not let the double heyres of eye liddes to grow agayne." Later medical authorities, after observing that the leaves are juicy, saline, and bitter, state, that in doses of two or three ounces, given in whey, it is useful in hypochondriacal, scorbutic, and declining habits; that it corrects acidity, and strengthens the stomach. Hoffman prefers it to all other medicines for removing ill-humours from the blood. Boerhaave frequently prescribed it in black jaundice, and bilious cholic. An infusion of the leaves removes freckles, and clears the skin. Dr. Cullen experienced its good effects in many disorders of the skin. (Smith. Martyn. Withering. Parkinson. Turner.)

How varied are the communications that weekly grace an Editor's table! How nobly expanded and philanthropic are the contents of some! How the cloven foot of selfishness will peep out in others! One seems to look at no branch of inquiry as beneath his notice; if not conversant with the matter himself, he is glad that others feel a gratification in investigating it, and that they gather here the information they need. Another seems to feel that his favourite subject is the only one in creation worth thinking about, and that no other should be discussed in these pages. Few, more than Editors, possess such opportunities for observing the great and

the weak points of humanity. They may thus be well fitted for teaching lessons of forbearance and the polite amenities of life. Indulged with a slight peep into such matters at times, and looking at one very delightful and hopeful class of the readers of this work—the young and earnest amateur—it requires no great labour to perceive that a prevailing failing with them is an intense love of variety and quantity.

Only think of the possessor of a sky-light, or the owner of some eight-feet square of a window, burning with a desire to rival a Chatsworth or a Trentham! It is right at times to cherish lofty aspirations. In mental

and moral matters, the standard of our ambition can never be too high. As respects social success, there is truth in the old adage, that "he who strives for a silk cloak, will probably, at least, get a sleeve." But when we come into contact with the physical laws of nature, every inordinate expectation can only be followed by its proportionate damping disappointment. To avoid such a result, which often too effectually chills enthusiasm, we would merely moderate this general aspiration by leading it in a safe practicable channel. Something in this way will be done, if our friends will bear in mind that, as a general rule, plants can eat, digest, and assimilate their food, so as to add fresh matter to their substance, only in good light. Hence the importance of knowing not so much the size of rooms and houses, as the quantity of glass, and its relation to the cardinal points. Plants may be kept in windows with a north aspect, and they will stand there when in bloom for a long period; but few will continue healthy if kept there altogether. Hence, again, the importance of so arranging the plants that the one does not shade the other, but the leaves of all are fully exposed to light and air. Hence, again, the necessity, when *quantity* must be had, of keeping the plants in rather a small state during winter; growing them on, by giving them more room in spring; by taking some to other windows, or, what is better still, nursing them on, to be placed or planted out-of-doors in summer, where they will reward their cultivator with a luxuriance and beauty which few, without great care, would attain either inside or outside of the window-sill if kept in the common pots and saucers.

The craving for variety beyond conveniences for them is by no means confined to young amateurs. It is spreading its influence over the more experienced; and professional gardeners are forced to bend before a stream which they find themselves unable to resist, contenting themselves if they are able to control it a little, instead of being entirely at its mercy. Where, in places of limited extent, shall we find the old-fashioned greenhouse, in which we might be sure to find, at certain seasons, certain plants stereotyped, as it were, in their places, and, for the time, commanding the chief and almost sole attention? The thirst for cut flowers; the desire for plants in bloom; the demand for filling some scores or hundreds of beds out-of-doors, in summer, with half-hardy exotics, are sweeping away old fashions and old customs, and making our plant-houses, winter stores, and preservatories of quantity, as well as scenes for exhibiting the *skilful* and the *tasteful* in gardening. Both of these objects are generally demanded—good individual specimens, with plenty of inferior individualities, for massing and grouping; and without now stopping to inquire into the greater pleasure derived from all of these new modes, or investigating into the additional *encouragement*, conveniences, and assistance, afforded to professionals, there can be no question that if labour be sweet, a fair portion of it is now realized by feet, hands, and brains. If a gardener does get gouty and rheumatic, it is not in general from the want of having

enough to do. In such circumstances, he comes to look upon the warm days of April and May as his best friends, as then he can get his half-hardy plants, and the hardiest of his stationary greenhouse plants out-of-doors, or under shelter for a time.

"Aye, that is just the notch of the matter," says one amateur. "I got my bedding plants, last year, scorched and frosted by turns in April and May; and what is more vexing, after choosing a sunny day to remove some *Cytisuses*, *Acacias*, and others, which you say may be moved early out-of-doors, the foliage got so blistered and scorched, that it has taken the best part of a twelve-month to restore them. And then, again, to make room for more summer beauties, I made a place for *Epacrises*, and winter-blooming *Heaths*, upon a north border, and though they looked healthy enough, they have given me no fine wreaths of bloom this season. I wish I could have kept them all under glass, as I used to do, when I grew fewer things." A second amateur tells us that his plants have been driven and tossed by winds and rains, and that even the mats and poles he supplied for protection, had only, with their lashing and sweeping, added to the effect of rendering them tattered and torn. And a third, complaining not only of all these, but enquires by what management he may enjoy his *Geraniums* and *Fuchsias*, out-of-doors in summer, and devote his glass then to vines, tender annuals, &c.? We will endeavour to give a few directions to meet these different wishes and varying circumstances.

1stly.—It is an error to choose a sunny day for removing good specimen plants from the Greenhouse. A dull, warm, and even a dripping day is preferable. In the first case, the assimilating and perspiring powers of the plant would be at its height. In the second, they would be languid; and a better opportunity would thus be afforded for enabling them to suit themselves to their fresh situation.

2ndly.—In most cases, it is desirable, at first, to give the plants a shady situation, or so to place them that a screen can be thrown over them to protect them from the influence of a powerful sun. The correctness of this practice will be evident, if it be recollected that the finest glass intercepts many rays of light, and lessens perspiration from the foliage, while, very likely, the transmission of light was further blunted by a canvass blind, or other artificial means. Everything like sudden changes should be avoided. Many amateurs, and young gardeners, are slow to learn this. They will keep plants in a cold, airy shed for hours, after taking them out of a comfortable pit, or house, where all the attendant circumstances were so different. We have often thought, when such cultivators were wondering how a plant would get sickly, diseased, and insect-covered, and woe-begone, that the explanation would burst upon them, if they themselves were placed in a similar cold position, after being snatched, undressed, from among the bed-clothes. Had Plants a voice, what tales of wrengs they would unfold!

3rdly.—It is desirable to remove the hardiest first, such as *Genista*, *Cytisus*, *Acacia*, winter and spring

flowering *Salvias* and *Rhododendrons*, when the buds are set, &c., but these should all be shaded at first, and receive moderate exposure afterwards. It is preferable not to place *Camellias* and *Azaleas* out until the point-bud begins to swell, and while the second should have a free exposure as respects the tops in a short time, the *Camellias* carry a better green if they do not feel the full force of a Midsummer sun, and yet are so placed that they do not want shading.

4thly.—With but few exceptions, hard-wooded plants, after they have been growing freely, and receiving a little shade at first, to use them to out-door circumstances, require to be shaded no more afterwards. The continuous shade was the reason of the *Epacris* not blooming freely. What has led many to give them this treatment, was the danger of their hair-like roots being burned and scorched in their pots; but this being guarded against by plunging, and at the same time attending to drainage, these, and many *Heaths* generally grown, would, after a short period of transition to use them to it, require no shade when placed out-of-doors in summer, and the want of that shade would make them more stubby and prolific.

5thly.—No plant of any size, standing out-of-doors, is safe in a windy day. We have seen gullies swept on grass and gravel by the damaged heads of such plants acting as brooms in a rainy, windy night. For securing such plants, nothing is more economical and suitable than driving in stakes, in rows, five or six feet from each other, connecting these with rods, and fastening the stem of each plant to the rod, placing moss round the stem to prevent it being injured by the bandage. This will keep the plants upright.

6thly. What is worth doing at all, is worth doing systematically and well. In almost every garden, a place is required every season for hardening-off plants, and as a standing place in summer. Protection and shade will be sure to be wanted; and it is well not to be at the mercy of portable stakes, and single, isolated, littery mats. A simple skeleton for supporting a protecting or shading covering is easily made, and though costing a little labour and expense at first, would be a saving for years afterwards. Supposing, for instance, that we could command a space, seven or eight feet wide, in front of a south, west, or east wall, but preferring the first as having the power to shade at pleasure. Now, against this wall, at the height of six or seven feet, less or more, we would fasten a stout rail of wood longitudinally—say for twenty feet in length. Opposite this, and enclosing a space of seven feet, we should drive in a row of five larch pole stakes, so that they stood three feet above the ground. On these we would fasten a rail, and then from that take five other stout rails to the one placed longitudinally against the wall, and if these were stout, the skeleton frame would be finished; but to make assurance doubly sure, we would put other five stakes in the centre, and fasten the transverse rails to them. We would secure protection to the two ends by mats or cloth, made to hook off and on

easily, having a transverse rail at the bottom of either end to fasten it to there. The covering for the top we would have in two pieces, so that we might expose plants in one division, and shade or cover in the other at will. Many materials might be used; we would prefer light canvass, or strong unbleached calico. We would have it long enough to hang a little over the front. We would fix the one end securely against the wall, and the other to a wooden rod, or roller, from one to one-and-a-half inch in diameter, and the end extending beyond the cloth and the skeleton frame at least six inches. On this space we would wind up a cord longer than the length of the width of the roof; and as we pulled the cord, the resistance given by the cover being fastened at the top would cause the whole to revolve, mounting the roof, and taking the cover along with it, being easily fixed at the top, or any other intermediate distance, by fastening the string kept tight to a staple or nail in front. Whenever the string was loosed the rod and cover would run down. Would not such a simple thing as this save much of trouble, and annoyance, and vexation, to many of us?

7thly. We have often wondered that something on a similar plan, but better and more elegantly made, did not exist, not directly in sight of, but at no great distance from, the mansions of many who ardently love flowers, but who would wish to behold their beauties more fully than they could well do in a greenhouse. A similar contrivance would also enable amateurs to enjoy for a long time their best *Geraniums*, &c., when their house or houses were wanted chiefly for other purposes. Last summer, we noticed a neat structure of this kind, with a shelved stage underneath, at Delapre Abbey, near Northampton, which, at that time, was chiefly filled with *Fuchsias*, and compact, well-bloomed florists' *Pelargoniums*. Having applied to Mr. Mackie, he has given the following outline of its structure—

“The position should be free from the prevailing winds of the district, and, if possible, should face the south. Sockets are sunk into the ground for receiving the posts, much as is done for fixing the posts in laundry grounds. The posts are three inches by two inches, and made at the top with a morticed joint, that the top length may extend securely from one post to another. The height of each post is five feet six inches, the width of place nine feet, and length twenty feet. In that length six upright posts are necessary, three behind and three before, and the same number of cross bars, one to form each end, and one in the middle. On each of these cross bars a piece of wood, two feet in height, is fixed by morticed joints, or screws, and another piece of two-inch wood, fixed longitudinally on these, forms the apex of the roof. A rafter at each end, and in the middle fixed to this ridge, and to the plate on the top of the posts, completes the skeleton on which to suspend the covering. The cost, including labour, material, and having it neatly and strongly done, averages about three shillings per foot in length, exclusive of covering and stage. Strong calico, without preparation, keeps

out rain, and will last several years. To secure it from winds, iron rings are sewed on along the ends and middle of the covering, and an iron rod is so placed as to receive each set of rings, which is then screwed in its position. By placing a piece of string through the rings, and allowing it to pass over another fully in the ridge, the calico may be raised or lowered at pleasure.

"A net, occasionally suspended along the sides in very windy weather, is found quite sufficient to secure the plants from danger. The stage on which the plants are placed, if made to face the south, and the plants occasionally turned, there being no obstruction to the light on any side, will present a fine bank of flowers, and keep in bloom longer than in a Greenhouse. I shall be pleased if this description should induce others to adopt this useful appendage to garden structures."

This structure struck us as being very neat and serviceable. The latter remark about light is owing to the height of the posts, which has also this advantage, that the owner and visitor can see the beauty of the flowers without hindrance, even though the force of the sun should require the covering on the top. The principle being understood, clever amateurs will soon cheaply construct something suitable for themselves. A stage on which to set the plants, however homely made, would cost more than many a man in these taxation days would care to incur; but a stage is not at all necessary to the system; in fact, we look upon it as its weak point. A great many plants could thus be kept on the common ground. A bank of earth, with one side, and that facing the south, or with two sides facing east and west, span-roofed-house fashion, with the apex of the bank some three feet above the surrounding level, and with its surface covered with sand, would enable you to plunge many flowering plants, and thus involve far less labour than when they stood upon a stage. Some friends, with an eye to the artistic, might cut out that bank into separate shelves or terraces, holding up their sides with turf, or clinkers, old bricks or flints, run securely together, or even boards, or small pieces of peeled branches of oak, or unpeeled larch and spruce driven in as small stakes. In all such cases, the pots could easily be plunged, and sand would be the best material, as easiest moved. So done, the place would be no eye-sore in winter; and after the middle of June, in common seasons, provided with blue-and-white coloured canvass to keep out sun when very bright, and rain at all times, and with Nottingham netting, to say to all winged intruders, "stay where you are;" or, even without that netting, if you did not mind these gentry feasting upon and fecundating your best flowers, many plants, such as Fancy and Florists' Pelargoniums, Fuchsias, &c., would yield an interest and an influence which it is difficult to give them when stilted in pots upon the stage of a Greenhouse. Considering the age we live in, and what glass is and may become, we shall not be surprised to hear of some amateur laughing at all this—constructing, at once, a summer structure, roofing it permanently with rough sheet, or shaded glass, and securing the plants all round with curtains suitable

to the weather, and so contrived as to be moveable almost instantaneously. F.

Our opinion has been expressed on more than one occasion, that among the various advantages that have resulted from Poultry Exhibitions, none were of greater importance than the facility that was thus afforded for rendering uniform the nomenclature of the various races of our domestic fowls.

Thanks to the decision that first settled, and has since continued, the present classification in use at Birmingham, the prize lists of the Metropolitan, and other leading societies, have deviated in so trifling a degree from the system that has thus received the public sanction, that general, though not universal, acquiescence has been accorded to it.

On this account, we regret to find that the Holmfirth Agricultural Society, in their prize list for an exhibition to be held on the 27th of August next, have not adopted this system in their poultry classes. "Golden and Silver Pheasants" have assumed the place hitherto occupied by the Gold and Silver-spangled Hamburgs, while both varieties of the pencilled Hamburgs seem to be united under the head "*Chitteprats*." The mere name, we admit, may be of little importance, and its general reception and use is the main point to be regarded. Mr. Dixon tells us (page 344, second edition), that these *Chitteprats* are also called "*Bolton Greys*," and "*Narrowers*," while the terms "*Pencilled Dutch*," "*Creoles*," and some others, are also applied to them; and in his classification of the whole Hamburg family, at page 349, we have the basis of the arrangement on which all our leading societies have hitherto acted.

Now, surely, it would be more desirable, in every point of view, to continue a classification thus generally recognized, than, by the adoption of any of these various local synonyms, still further to bewilder the unfortunate exhibitor. It is perfectly true that Hamburg is not proved as the original dwelling-place of the Pencilled birds; and that the Spangled are very rarely included in our importations; but poultry genealogy has been, as yet, so imperfectly unravelled, that, if we are forbidden the use of such designations, unless the evidence of the breed having been thence derived is complete in every link, our difficulties on this head must extend to Polands and other families. Hamburg, we repeat, is, very probably, unable to substantiate her claim; but are any of the English, or other localities that seek to confer their name on their birds, better entitled to this distinction? Unless this can be satisfactorily shown, why should we not retain a name that is sufficiently recognized, to prevent mistakes as to the breed of fowls thereby designated?

The terms "pheasant," or "pheasanted," are objectionable, as tending to preserve an error with respect to the intermixture of pheasant blood with the pure fowls, which has been clearly shown to be erroneous. Pheasants have, undoubtedly, bred with fowls, but the instances, comparatively, are few, nor does any one of

them appear to authorize the opinion that a permanent union of the two species has ever yet been effected.

But Holmfirth is situated in a district where these terms, and the various synonyms of the pencilled Hamburgs that we had before alluded to, are in common acceptance; and, probably, they are the words that would be best understood by those who are likely to exhibit on that occasion: our remarks, therefore, must not be construed into anything like condemnation of their prize-list, which is both liberal and well-arranged, but simply as expressive of our regret, that, in the present advanced, and, as we hope, still advancing, state of poultry matters, some general system of nomenclature has not been yet arrived at.

The classes for dead poultry are, decidedly, a step in the right direction, and will be valuable, as impressing on the public mind the importance attached by such societies to the requisite qualities of table poultry.

The cottagers, too, have classes for those birds which are most likely to be found in their possession, and which are most useful for general purposes; though Geese, we think, should here have found admission; since, wherever a village green or common is at hand, they are kept by the labourer to great advantage, and at little cost.

The Holmfirth committee have evidently resolved to have a highly popular exhibition; and when we consider that every branch of rural economy is, then and there, to be represented—cattle, sheep, pigs, and poultry, no less than butter, eggs, cheese, and oat-cake, and that, moreover, the attractions of the flower and kitchen gardens are also to be brought together, their manifold labours at once elicit our most earnest wishes for their entire success.

W.

WE hear that the Grapes in the *Cow-Vinery* erected by T. H. Lawford, Esq., at Tirydail, Llandillo, South Wales, ripened very well last year. At this season the cows are turned out to grass, but there is an equally good promise of a crop this year, the wood having ripened well.

A VERY great improvement has been made in *Gidney's Prussian Hoe*. It has always been the best implement we know for cutting down weeds, and loosening the surface of light soils. The only defect was, that when using it among plants there was a difficulty in getting at any weed that grew close to a plant on the side facing the left hand of the workman. This defect is now entirely removed by adding a spud edge to the back of the blade of the hoe. In this form it may be described as the *Double-edged Prussian Hoe*.

WE have often thought that the leaves of some of our native plants, or of some plants hardy in our climate, might be manufactured so as to resemble *Tea* in flavour and quality. Mr. A. Forsyth has tried experiments to ascertain whether such a manufacture could not be

established, and has just communicated to the Horticultural Society that the leaves of the common Holly, when properly dried, are equal to ordinary Tea. He appears to have been led to this experiment by the fact that the celebrated Mate, or Paraguay Tea, is made from the leaves of a Holly (*Ilex Paraguensis*). More than 5,000,000 pounds of this tea are made in Paraguay annually, and are consumed in the Brazils, Chili, and the neighbouring country.

COVENT GARDEN.

IN consequence of the improved state of the weather, garden produce has considerably increased during the past week; but while the cultivators of culinary articles are looking forward to the gradual, and, no doubt, complete, attainment of their expectations, the season is such as already to excite the fears of the fruit growers and orchardists. The powerful influence of the sun during day, and the cold, chilling, and blighting east winds during night, have already made considerable havoc among many sorts of fruits. Unprotected *wall fruits*, such as Peaches, Nectarines, Apricots, Pears, and Plums, have suffered greatly, and so also have the *standard* Pears and Plums in many districts. The Cherries, particularly the early-flowering varieties, have also received a pinch, but those which are less early may be said to be comparatively safe as yet. As regards Plums, we know several instances where there will be a complete failure. *Forced Strawberries* are now rather plentiful at market, and may be had at from 6d. to 1s. per ounce. *Hothouse Grapes* are also more plentiful, and, in consequence, more reasonable in price. Excellent Hambro's may be had from 7s. 6d. to 12s. per pound. *Rhubarb* may be said to be no longer a luxury, whole waggon-loads being poured in on every market-day, and realising from 6d. to 9d. per bundle. *Sea-kale* is also plentiful, at 2s. 6d. per basket. *New Potatoes* make from 1s. to 2s. per pound. We have observed some very fine forced *Peaches* during this week, which sold for 24s. per dozen. *Radishes* are very plentiful, at 1s. per dozen bunches. *Asparagus*, 2s. 6d. to 7s. 6d. per bundle. *Cucumbers*, of good quality, 6d. to 1s. each. *Cabbages*, 1s. to 2s. per dozen, according to the quality. *Brocoli*, 2s. to 3s. per dozen. *French Beans*, 1s. to 2s. per 100.

FLOWERS are very abundant, and consist of *Geraniums*, *Kalmia latifolia*, forced in pots, and in a mass of bloom; *Ixoras* of various kinds, *Gardenias*, *Heaths*, *Cinerarias*, *Tulips*, *Azaleas*, *Camellias*, *Epacris*, *Roses*, and *Mignonette*.—H.

THE CAMELLIA.

OF all the choice plants, or families of plants, of which Britain now can boast, none is more generally useful than our present subject, nor, I may add, is any one more popular. Its aptitude for the bouquet, the epergne, our corridors, balconies, drawing-rooms, and, indeed, for every spot where a flower is appropriate, to say nothing of the white Camellia at the marriage festival, and the crimson one wreathed among dark tresses in

the ball-room, all conspire to render it a universal favourite. Like many other plants, this is cultivated by modes somewhat different in a few particulars, and, it may be, with success in each. As, however, I have been eminently successful for many years in producing a profusion of blossoms from one house, from the end of October until May day, I flatter myself that an account of my practice may be interesting to many, first premising that I lay no claim to superiority in my practice over that of others, who, also, have been alike successful.

In order to ensure abundance of well-ripened blossom-buds, I have for years held the opinion that *the Camellia requires to be forced* in its growth. Plants thus treated seldom manifest a tendency to produce a second growth; the latter, it is well known, being frequently against the production of blossom-buds. The reasons are tolerably plain. Camellias in a cold greenhouse have to produce their young growth under circumstances somewhat adverse to a free and liberal development;—under a forcing system, in a moist and close atmosphere, everything combines to cause a development—I will not say equal to, but indeed superior to the amount of growth-matter stored up in the plant, for from this principally is the young growth produced. Camellias, like many other plants, doubtless collect much of their food from the atmosphere, through the medium of moist vapour; and by sustaining a moist air, free from that dissipation consequent on a liberal ventilation, the volume of the leaves, as well as extension of growth, is much increased by the forcing process. Such have been my ideas for many years, and on this my practice has, in the main, been based.

I may first observe on the process of *potting*; and here, as to the proper period, practical men perhaps differ more than in any other point. But this is no marvel. Behold the difference that has existed about the best time to plant evergreens, or even potatoes! This, however, I will say, that if any man pursue a *good system of culture* all through the season with his Camellias, I care little when he repots them; not that I think it a matter of perfect indifference, but that it may be considered a kind of non-essential, and to lay much stress on such fiddle-faddle affairs is to decoy the attention from the great facts of the culture.

My practice is to repot, if necessary, shortly after the spring growth is fairly developed—say in the first week of June, just before the formation of the blossom-bud. If, however, my Camellias were in bad repair at the root, I should, probably, choose another period.

About the process of potting I am far more particular, especially when the specimens are getting large; for, as they do not require to be handled above once in three years by my practice, it becomes necessary so to constitute *the compost* as that it may long preserve its mechanical texture. Strong, or somewhat adhesive loam, is the chief ingredient in my compost; to this I add fibrous peat of some age, and a little leaf soil, such as worn-out linings; and, in addition, some silver sand, in proportion to the strong character of the soil.

But the *mode of potting* is a thing on which I lay some stress. I say not that such precautions are indispensable, but they are very wholesome, as time has proved. Everybody who has considered the potting question knows that it is one thing to use a powdery and perfectly uniform compost, and another to use portions of the compost in tufts or masses. If any one going to transfer a Camellia, say from a five-inch pot to a nine-inch one, were to riddle his compost, reduce every tuft of organised matter, and tumble this soil around the ball, without taking some means to prevent the too close cohesion of its particles, and then take a waterpot, and apply water liberally to “settle the soil,” as it is termed, he would, at the first blow, change the

character of his compost into mud; and no plant could ever be expected to thrive in it.

I keep two articles on my potting-bench in Camellia potting; the one a mixed compost, the other simply lumps of turf, from which much of the loose soil has been ejected. This turf is chopped out of a ridge that has been piled in the compost-yard a year or so; and which has never received the least additional moisture since it was piled. It is so mellow and dry, that in the act of chopping into lumps as big as hen’s eggs, about one-half of the mere soil falls out: these lumps are rich in organic matter, and will preserve their texture for many years. The mixed compost is as first stated, and, as to texture, it is simply crushed to pieces by the hand. These materials are always used in a state which may be termed nearly dry.

Now, then, for the potting, or shifting; but my readers must observe, that I am merely treating of re-potting Camellias which have been used to good treatment previously. Three crocks being so placed over the hole in the pot as to ensure three or four small outlets for the escape of water, a few pounded crocks are strewn over them, as many as will just hide the big crocks from the eye. On these a thin layer of the turfy material, or, if that be too thick to admit a liberal shift, a thin layer of fresh moss, about which our clever friend, Mr. Fish, was so eloquent a week or two since. The Camellia is now turned out of its pot, the larger crocks become interwoven with the roots disengaged carefully, and the plant placed in proper position. Henceforth, the process is confined to strewing the mixed compost in thin layers alternating with the lumps of turf, which are crammed in on every occasion, compressed tightly, but no thumping on the bench allowed. When within two or three inches of the rim of the pot, a regular casing of the finer material is placed over, at least one inch in thickness: this is pressed down firmly, and made rather concave on its surface, in order to cause the subsequent waterings to preponderate towards the old ball, where most need will exist of moisture for a year to come.

And thus having done with the potting process, I must take a fresh view of the subject, and ask our readers to fancy a house of Camellias in the early part of April, blossoming still in spite of the cultivator, who is secretly desirous that they should rest awhile from their labour, and prepare for another year; but is yet unwilling that the ladies of his establishment should lack a nice Camellia-blossom in their bouquets. Up to this period, ours have been treated in the ordinary way: the frost has been kept out by fire-heat occasionally; they have been freely ventilated, and, indeed, nothing worth recording has been done to them since last November, except liberal waterings of clear and weak manure-water, and the cuttings of many hundreds of blossoms since that period. But the time arrives when another process must be carried out, and under somewhat differing conditions. New shoots must be produced, if bouquets are to be furnished once more for another continuous half-year.

Our house, hitherto exposed to the sun, is now shaded; atmospheric moisture hitherto stinted, or applied with regard to the care of the blossoms, is now applied morning, noon, and evening; in fact, the foliage is kept almost constantly damp, or in a damp air. These are extreme measures, I confess; but they produce very satisfactory results. The house is closed altogether; the floors are kept wet, and the ladies of the establishment, seeing that all is “up” in the flower way for a few months, endure this affair in a most patient way, believing it to be for the best in the end. These circumstances, carried on thus (with a few trifling intermissions of air now, because the sun shines so very hot, and neglect of moisture appliances, and again, because

your man has forgotten something), throw the plants, in about five weeks, into the most exuberant foliage: the plant has, up to this time, done all it could do in the way of growth, and of a sudden, as it were, stops to inquire about further demands. We have now ample expansion of foliage—the plants are covered with new shoots, and those shoots are covered with broad and thick leaves, solid and leathery; nothing of the minny character about them. Having thus arrived at the beginning of June, we suddenly shift our tactics.

To run Camellias into wood, and to cause each young shoot to produce a flower-bud, are two very different affairs. The absorbing process must now give way to a high course of elaboration. During the growing period, the plants were freely watered with tepid liquid-manure; they have now to undergo a considerable amount of drought, in order to force the production of blossom-buds. They are still shaded carefully from sunshine; and instead of root-watering they are frequently syringed. The close system, too, is reversed: before they had little or no air, now they are freely ventilated day or night.

By this treatment we always get our plants covered with flower-buds in about three weeks after the spring growth has ceased. This brings us to somewhere in July, and now, being assured of good bloom, we resume our root-watering, using clean water at first, until the buds are as large as Marrow Peas, and then betaking ourselves to liquid-manure again. In the beginning of July the pots are placed on a plot of ground reserved annually for them, the basis of which is composed of cinder-ashes, six inches deep. This receives annually a drenching of lime-water, as the earth-worm must not be permitted to enter the pots at any period, or they would speedily derange the drainage. They remain here, well secured against winds, until about the middle of August, when they are removed to their winter quarters again. Whilst out-doors they receive daily attention as to watering; and I generally toss water from the pot liberally over their foliage twice a day, keeping the ashes beneath them quite damp. The plants are so placed that the sun cannot act on the pots; indeed, they are too bushy to permit such an injurious visit; and I place a few ordinary things in the front rank as protectors in this respect.

Thinning-out the blossom-buds is an important affair, if full-sized and well-formed flowers are desired. This process is commenced when the bloom-buds are as large as big peas, they then slip out of their sockets readily. This requires a little management: Camellias are generally required to have at least one dressy facing, and that towards a given position in the greenhouse or drawing-room. Not every one who indulges in a few Camellias can afford them the room which our great exhibition men do, in order to make their plants have faces all ways. In thinning the buds, therefore, due regard must be paid to the side where the blossoms are most required.

Camellias are very apt to be infested with *the scale insect*. This adheres to the stem most pertinaciously. I have some experience of this worthy and his habits, as forced Camellias are peculiarly liable to them. I have always been able to bid them defiance by the means of soft soap, one ounce to the gallon; a bucket of this is kept near the plants all the time they are out-doors, and a syringing of this liquor almost daily, if necessary, will soon settle them.

The blossom-bud of the Camellia requires much time to feed in; those who attempt to force them into a *very early bloom* by the application of heat before the bud is thoroughly organised, will be rewarded with abortive or unsatisfactory blossoms. As my worthy employer and his family stay with us from the beginning of November until parliamentary matters commence, we are required

to have early Camellias; I, therefore, apply artificial warmth, in a guarded way, in the early part of October. The hot-water piping being kept constantly about milk-warm; the floors are moistened daily, and a ventilation kept up day and night—no drip being permitted.

I have much to say about *sickly Camellias*, which I must, with other matters pertaining to them, handle on another occasion. Mr. Fish, however, and others, our coadjutors, have said excellent things about them; and this comparing of notes will, I trust, do us no harm. Let us, as the Hibernian said, “agree to differ” occasionally.
R. ERRINGTON.

HORTICULTURAL SOCIETY'S SHOW,

MAY 14TH.

THE May shows are the freshest of the season, the plants looking more “younger-like,” and more gay in their flowers than either in June or July, and those great patrons of gardening who are gardeners enough in their way to know this, are seldom absent from the May shows, let it hail, rain, or shine. Fortunately for all such, the day was the best of the season, but the garden itself never looked so late at the middle of May. I did not hear how many entered the gates, and I did miss many of our May patrons. The Duke and Duchess of Sutherland were there, with the Duchess of Argyle, the Earl of Carlisle, and Lord Blantyre, Lady Grey, Lady Hume Campbell, and many more of the same rank, with my own late kind employers, Sir William and Lady Middleton, from whom I received some very interesting details about the great alterations in the garden at Shrubland Park. I also met then with my own successor at Shrubland Park, Mr. Davidson, and he helped me to some names, and to form a judgment on some new plants, and seedlings, and other things. All the rest, the great bulk of the show, were familiar to me enough for years past; I knew most of the plants from their cradle, but I can safely say that such a mass, or rather such masses of extreme specimen plants, were never seen before in one place. I think this was the nineteenth May show I saw at Chiswick, and I am quite sure, that if the ten best plants at each of them could have been put aside to come in to-day, they would fall far short of what was produced on this occasion.

There was a “strike” among the large orchid growers this spring, against the society, for a rise of wages, and both parties held out to the eleventh hour, but, fortunately, the Society gave way, and the orchid banks were magnificently grand and imposing. Nothing particularly new, however, but there were several old plants of them that were never seen at a May show before; the best known of them is *Dendrobium speciosum*, it had two spikes of flowers on, but it must have been sent more to let people see the flowers, as it was very rare to see this fine old plant in bloom.

The *Geraniums*, or large *Pelargoniums* of the books, were as numerous, and as well flowered as they were ever seen in May, and the *fancy* ones were much better than usual at this season. There were six of them from Mr. Turner, of Slough, the very essence of perfection itself.

Pansies enough in pots to make a large centre bed in a flower garden, and all as far different, (not better), from the “kiss at the garden gate” pansy as the pansy is from the Heartsease.

Cinerarias very much better than I ever saw them there before, but still with a few trumpery wild, weed-like things among them. A large stage of *Auriculas* in full bloom, and a tent set apart for seedlings, all but deserted, and watched over by three or four mute Bedouin Arab-looking Franks. *Heaths* not so numerous by one-half as I have seen them there in May.

Stove plants not numerous either, except orchids. Greenhouse plants, chiefly from Australia. Indian or Chinese *Azaleas*, and *Roses*, were never more numerous, nor nearly so fine.

The newest plants of the day, or, at least, the lions, were two from the north of India—one a *Sikkim Rhododendron*, called *Edgeworthii*; the other the old *Gigantic Lily* of India, of which a peck of seeds, at least, had been sent home within the last fifteen years, but no gardener or nurseryman could get them to vegetate, except once, with the Messrs. Loddiges. Of them I cannot trace any further. The plant here to-day is an imported bulb by Mr. Veitch, now of the King's Road, Chelsea, as well as of Exeter. Many say this Lily is not quite hardy; I think it is quite so, from what Lord Hardinge told me about it shortly after he returned from India. He sent large quantities of the seeds home, and Sir William Middleton had some of them, and I had mine thirty months in a pot without the least change, although they are as thin almost as this paper. Mr. Veitch's plant stood six feet high above the pot, and had twelve large white flowers hanging down from the top part of the stalk. Each flower is of exactly the same size, colour, and marking, as that of the old *Hippeastrum vittatum major*,—a soft, creamy-white, with six purple stripes inside each flower, four or five inches long, and from three to four inches across the opening; the leaf and flower-stem have not the slightest resemblance to those of a true Lily. The stem is thicker than a man's wrist down at the bulb, and it tapers all the way up, and is hardly half-an-inch through where the flowers come; it is also clothed with leaves all the way up to the flower. At the bottom, the leaves are as broad as a full-grown cabbage-leaf, on long footstalks, but of the shape of an Arum-leaf; the size of the leaves, and the length of the leafstalks, diminish all the way up, till at last there is no stalk to the leaf, and only an apology of a leaf to speak of. Altogether it is a noble plant for a cold conservatory, or front hall in a large mansion; but out-of-doors, let it be ever so hardy, it ought to be planted in a shallow place, else the high winds will tear these large, soft leaves to ribbons. A peat bed, or border, will be the best for it. It seems to be of the same habit in the flowering as the American Aloe, never flowering but once from the same root-stock, but making side suckers to keep up the succession; and it struck me on the spot, to advise people to flower it rather in groups of these suckers in one pot than on single stems, and I engage this is the real and true way to make the most of it. Then it will be on a different plan from the *Hippeasters*, which flower on side bulbs, and on the old one in the middle at the same time, as I shall explain more fully in my next paper on bulbs, in which the *Hippeasters* will be described.

The *Rhododendron Edgeworthii* is one of the new seedlings from the Sikkim Himalaya. The leaves are from two to four inches long, and much wrinkled. It is a very superb shrub, with large white flowers, nearly four inches across, and overcast with a slight tinge of roseate hue. This will be as tender as the old *Arborea* very likely, as it does not live more than 9000 feet above the sea, and is from the very dampest forests of the very dampest parts of the whole Himalayan range. Our November fogs are nothing to those damps for nine months in the year: a perpetual hot current may be said to blow against the Sikkim hills across the plain from Calcutta, discharging a perpetual shower, as it cools, on reaching the hills, causing many of these *Rhododendrons* to group up on other trees, like air plants, as Mr. Low found them in Borneo.

Another novelty that was never before exhibited at these shows, is a half-hardy bulb-like plant, called *Tritoma Rooperii*, in the way of *Tritoma media*, but not quite so fine when grown in a pot. *Coleus Blumei* is

another new plant, interesting for the dark-purple blotches on the light-green leaves. I mentioned this plant last October from Mr. Low's nursery, at Clapton. Another little new plant, called *Friesia peduncularis*, from Van Dieman's Land, by Mr. Lee, looked like a young *Elæagnus cyaneus*, with white Andromeda-like flowers; and the new *Tetralthea ericifolia*, with lilac flowers, which I mentioned as a first-rate greenhouse plant, at one of the late meetings in Regent Street. *Streptocarpus biflorus*, from Mr. Veitch, was only shown once before in this garden. It is superior to the old, single-flowered one, and is well-worth having.

Of all the *Pansies*, flower-gardeners look only at the self-coloured ones. The best yellow of them at this show (and it is an old one) is called *Ophir*, an excellent thing for a bed. The best white is called *Royal White*; the best plum-coloured is *Mrs. Hamilton*; and the best dark are *Sambo* and *Flower of the Day*. All these are very rich indeed, and suitable for bedding.

Of bedding *Geraniums* there was a new white one called *Boule de Neige* (or ball of snow); it is a well-marked horseshoe, and has a good truss of good-shaped, whitish flowers, but the white not so good as in Sweet's *Zonale albiflora*, and the seedlings got from it. Still, it is an excellent improvement on that race; and through it and them we shall soon have varieties of the scarlet breeds, with trusses as free as in Tom Thumb.

The best high-coloured among the new *Pelargoniums* is one called *Governor-General*. *Salamander*, *Celia*, *Basilisk*, and *Magnet* are also of the same fiery orange-scarlet, and all of them come in well to heighten the glow, and vary the sameness which a long stage of these great prize *Geraniums* always present; while such as *Mont Blanc* and the *Virgin Queen* relieve them with their pearly-white blossoms; but we must put off a real examination of these flowers till June, when all the varieties are shown together, after having the benefit of a brighter sun. *Ajax*, *Incomparable*, *Gulielma*, *Rosamond*, *Arethusa*, *Rosalind*, *Marquis of Stafford*, and *Flying Dutchman* were the most conspicuous to me among the vast number of *Pelargoniums*, but I only go by the distinctness of the kinds looking at them a short way off. I have not the least knowledge of them, or the least desire to know them by their "properties" with the eyes of a florist. I look upon them all as ladies do; and those who look upon them with stronger eyes, must follow Mr. Appleby; besides, their "properties" are his property, and, therefore, he is the most proper person I know to consult about them.

Of *Cinerarias*, I yield to no man about them; and I saw by this show that my disciples are multiplying, and I shall never cease hammering down the weeds from them, while we have any that are not worth the pots they are growing in. There were no first-rate new *Cinerarias* at this show; and I miss *Prince Arthur* altogether—the best one last year. *Amy Robart* was the best self shown to day, and a kind of purple. *Exquisita*, white centre and crimson edges, is a very gay flower. *Mrs. Sydney Herbert*, another in the same way, but not so bright as the last. *Mrs. Beecher Stowe*, a white, with lilac edges, is a very delicate and modest-looking flower, which will have a great sale all over the country, if it were only for the name. *Symmetry*, very light, and only laced with faint purple, I admire; and also *Lady Hume Campbell*, another light one, with a mere shade of blue along the top of the petals, but that is as far as I can go in light flowers, unless the shades, whatever they be, are perfectly distinct, as in *Lady Hume Campbell*. *Cerito*, which is said to be among the best, is quite nasty to me, in fact, a muddle, and nothing else. *Forget-me-not* is not a bad purplish-red one; and *Polyanthiflora* is very well-named, and worth having, as exhibiting a slight difference in the style of flowering.

The most novel way of growing plants, as seen at

these shows, were from our friend and fellow-labourer, Mr. Appleby—six standards of the beautiful *Deutzia gracilis*, and I hope he has sixty scores of them, and that he will have no rest day and night until he sells and packs off every one of them. Two or three years back I wanted people to make such stands of many kinds of evergreen and deciduous shrubs, because I am quite sure they would be just in character and style for all our villa and cottage-gardens, and also for the terrace-gardens of our high nobility. There is nothing that I know of for this time of the season more gay or suitable than these standard *Deutzias* for placing among crowded plants in a show-room, whether it were a conservatory, or a greenhouse, an exhibition tent, or a crystal palace; and for this reason—they would not take up an inch of room, as the stems are small, and from thirty inches to four feet high. The pots could be pushed in anywhere, and the plume of flowers would rise above other plants, and vary the outline, and also set off other colours better than can be done by standard *Roses*. If these standards from Mr. Appleby had been placed among the Chinese *Azaleas*, the effect which I mean could be seen at once.

These *Azaleas* were never in such profusion before, nor larger plants of them, nor the plants better flowered. Accustomed as I have been for so many years to these exhibitions, and having seen many of those noble specimens in the seed-pans, as I am sure I have seen some of them, I must confess that I was as much surprised at them as were some of my next-door neighbours who saw them that day for the first time. After all, I think *Mirabilis*, one that I mentioned last week at Bank Grove, is the best coloured of all the race; and I know it would be the first colour that nine ladies out of ten would point out first. One called *Parsonii* is of the next best telling colour, but of a different shade—a very light purple. *Macrantha purpurea* comes next; then follow a dozen, at least, of equal merit; but those with the coppery-red tints have been going down in the estimation of ladies for some years, and the double-red is one which few of them can bear to look at; as to what lords, or gentlemen, think of colours in flowers, it is neither here nor there, for the ladies can always turn them with a little coaxing and reasoning.

After the *Azaleas*, we had some fine tree *Rhododendrons*, from Sion House; from Mr. Gains, of Batterssea; and from Mr. Lane, the great rose-grower. In the latter group were the best three yellow *Rhododendrons*, and two of those between yellow and lilac: their names are in my last June or July report.

Aphelcxis is another genus of Everlasting flowers, which is now brought up annually in collections. They look exceedingly gay when brought together. *Macrantha purpurea*, and *spectabilis*, are the two best purples among them, and *sesamoides rosea* is, perhaps, the best light one.

The *Hoya imperialis*, as it gets old and well-confined in large pots, makes really a free-flowering, noble-looking plant without taking up so much room as one would think. Last year I mentioned a morsel of a variegated *Aphelandra*, from Ghent. There was a large pot of it to-day, and it really is a fine plant, for the zebra marking on the leaves, long white bars across, but I question its being an *Aphelandra*, but the habit is very good for an *Acanthus*.

The fairy flower from Mysore, *Hexacentris Mysorensis*, was there from Mr. Veitch, but not out in bloom so much as this time last year; the plant, however, is a nice free grower, without any coarse rambling, and is, probably, the best pot-climber one could put in a stove. The *Magnific Medinilla* was there most gorgeous; one or two fine *Ixoras*; also *Hoya Paxtonii*, a rather new thing in the way of *H. bella*; but, generally speaking, there were but few stove plants of that stamp.

The immense specimens of greenhouse plants were really beyond the *Azaleas* in splendour. There is nothing now on the face of the earth like such things as *Pimelea spectabilis*, *Oxylobium Pultenae*, *Gompholobium barbigera*, *Adenandra* (*Diosma*) *speciosa*, *Adenandra fragrans*, with pretty rose-coloured flowers, *Eriostemons* and *Epacris* in abundance. Of the latter, was the best seedling I have yet seen from Mr. Veitch, it was called *Eclipse*, a large, bright scarlet flower, with clear white tips. *Pultenea stipularis*, like some bushy conifer, and every branch ending in heads of yellow pea-flowers. *Hovea Celsii*, covered down to the pot with flowering branches, quite an unusual sight with this straggling plant. *Chorozema varium nana*, one sheet of yellow blossoms. *Polygala Dalmaisiana*, the best of this race. *Borronias*, *Leschenaultias*, with *Eriostemon buxifolium* and *nereifolium*, were all most conspicuous along the tents, and, as I thought, better placed with regard to the general effect than is usual.

Orchids were in such numbers that one can hardly find room for the bare names. The true *Vanda suavis* was as good in Mr. Veitch's group as any that were there—it had four long racemes of flowers, each of which had a dozen of full open flowers on it; the lip is deep purple, and the sepals and petals were marked leopard-like, with brown bars on a white ground; *tricolor* is very different, and there were several varieties of it. A variety of *Aerides crispera*, called *Warnerii*, was one of the best there of that family. *Aerides virens* was also very fine, with the tips of all the parts marked with a purple spot; a lovely thing. Several plants of *Cattleya Skinneri*, the very richest of this rich family, and in better colour than I ever saw it before. *Cattleya Mossiae*, with three enormous large flowers on every spike. *Cattleya intermedia violacea*, a better variety than the common one. *Dendrobium moniliforme*, literally covered with its handsome purple flowers. *Dendrobium macrophyllum*, bowed down with the weight of flowers, which perfumed the air with its light rhubarb scent. *Saccolabium curvifolium*, with four spikes of purplish flowers, not often seen; one *densiflorum*, with no less than fifteen spikes of its soft yellow flowers. *Lycaste* (*Maxillaria*) *Harrisonii*, with at least one hundred flowers open, from Mr. Rollison, who also sent the rarely-flowered *Dendrobium speciosum*, and also a beautiful plant of *Leptotis serrulata*, in the way of *bicolor*, but much finer; the sepals and petals of ivory-like substance and whiteness, and with a rich purple lip. *Saccolabium guttatum* and *ampullaceum*, with deep purple flowers. *Phalenopsis grandiflora*, with sixteen open flowers on one spike, and more on branchlets lower down from the same spike; a sight never before seen. A more pinkey variety of *Adontoglossum citrosum* than the common one. *Phaius Wallichii* finer than usual, with its cinnamon-coloured flowers. *Cypripedium barbatum* and *Lowii*, in full bloom. *Epidendrums* and *Oncids*, with *nonsuches* of all colours and shapes, enough to bewilder one, and, what was much better, not a bad grown plant among the whole lot of them.

The *Roses* were crowded by the company all day long, in fact, a regular feast of *Roses*, worth all the admission fees. Before you could say Jack-the-Giant-Killer, after the gates were first opened to the Fellows and their friends, the Rose tent was swarming with the first comers, and for very shame, I was obliged to give way to strangers, and I was more than obliged to keep at a respectful distance. Every attempt was in vain I made through the day to get near the tallies, to see a few new faces that I wanted to get the true names of; at last I got hungry and out of patience, and were it not for the police, and more particularly for their head superintendent, who always accosts me in the Gaelic language, I should have made a disturbance. *Coupe de Hebe*, with its bright-pink or peach blossoms, *Paul Perras*, *Barron Prevost*, *Chenedole*, *Geant*

des Batailles, *Blairii*, No. 1 and 2, *La Reine*, *Emperor Probus*, *Duchess of Sutherland*, and *William Jesse*, are all so conspicuous for their very large flowers, or their rich colours, that one could vouch for them over the shoulders of a whole army; while among the tea-roses, no one who ever saw *Souvenir d'un Ami*, blush; *Niphotos*, pure white, when forced; *Viscountesse de Cazes*, the best yellow; *Triomphe de Luxemburg*, with a coppery tint; *Devoniensis*, and *Safrano*, would or could mistake them among thousands; but it is not the number of kinds, or the names, which strikes one so forcibly as the immense size of the plants, and the enormous number, and great size of the individual Roses themselves. In June and July, beautiful as they are sure to be, they will not be nearly so fresh-looking, and so beautiful and fragrant, as they always are in May.

Calceolarias are gone out of fashion, which is a great pity; but I foresaw and maintained years ago that that would be the case; they got them into such muddling colours about London, trying to make them into some confounded shapes, that no one who went out for a day's pleasure could look at them and get home in good humour. There were a few of them here to-day, but not nearly such good ones as we had in the country fifteen years ago.

Fruit looked beautiful; a dish of *Neclarines* from Mr. Fleming, gardener to the Duke of Sutherland, and another from Mr. Judd, gardener to the Earl Spencer, were the finest we ever had in May. There were, also, two good dishes of *Figs*,—a rare thing in May,—and one or two good *Melons*, if, indeed, a really good, wholesome Melon can be had in our climate so soon. The *Grapes* were better coloured than I ever saw them at the May show; and I was very glad to see three bunches of *Hambros* from Suffolk, as black as sloes, from Mr. Bradick, gardener to — Peto, Esq., M.P. for Norwich, at Lowestoff. There were two dwarf plants of a variety of the *Papaw-tree* in fruit (*Carica Papaya*); the large, green fruit in clusters, from the bottom of the stem all round, and looking very curious. D. BEATON.

CARNATIONS FOR 1853.

This list is carefully selected. I have the concurrent testimony of several eminent florists in various parts of the kingdom, besides my own judgment, so that purchasers selecting from this list will find they have obtained the best varieties at present known.

SCARLET BIZARRES.

<i>Admiral Curzon</i> (Easoms); extra.	<i>Fanny Gardener</i> (Ather-ton).
<i>Bardolph</i> (May).	<i>Game Boy</i> (Rainforth).
<i>Brilliant</i> (Hepworth).	<i>Howard</i> (Puxley).
<i>Brutus</i> (Coleutt).	<i>Lamartine</i> (Kaye).
<i>Bolingbroke</i> (May).	<i>Lord Lewisham</i> (Bunn.)
<i>Capt. Edwards</i> (Summer-scale).	<i>Lord Ranciliffe</i> (Holliday).
<i>Emperor</i> (Puxley).	<i>Prince Albert</i> (Puxley).
<i>Excelsior</i> (Kaye). Mr. Dickson says:—"This is a magnificent specimen of its class."	<i>Rainbow</i> (Appleby).
	<i>Ringleader</i> (Marsden).
	<i>Splendid</i> (Martin).
	<i>True Briton</i> (Hepworth).

PINK OR CRIMSON BIZARRES.

<i>Black Diamond</i> (Haine).	<i>Lord Milton</i> (Ely).
<i>Caliban</i> (May).	<i>Nulli Secundus</i> (Summer-scale).
<i>Count Pauline</i> (Holmes).	<i>Owen Glendower</i> (May).
<i>Duke of Bedford</i> (Ely).	<i>Paul Pry</i> (Wakefield).
<i>Duncan</i> (May).	<i>Prince Albert</i> (Puxley).
<i>Falconbridge</i> (May).	<i>Queen Victoria</i> (Puxley).
<i>Favourite</i> (Puxley).	<i>Rainbow</i> (Cartwright).
<i>General Monk</i> (Puxley).	<i>Sarah Payne</i> (Ward).
<i>Henry Kirk White</i> (Taylor).	<i>South London</i> (Woods).
<i>Jenny Lind</i> (Puxley).	<i>T. Hewlett</i> (Holliday).
<i>Kossuth</i> (Kaye); extra fine.	<i>Vivid</i> (Hepworth).
<i>King Alfred</i> (Gregory).	

SCARLET FLAKES.

<i>Africana</i> (Cullingford).	<i>Hero of Middlesex</i> (Wilmer).
<i>Beauty of Brighthouse</i> (Bot-tomley).	<i>Justice Shallow</i> (May).
<i>Brilliant</i> (Chadwick).	<i>King of Scarlets</i> (Ely).
<i>Brilliant</i> (Elliott).	<i>Magnet</i> (Kaye); extra.
<i>Cradley Pet</i> (Wallis).	<i>Queen Victoria</i> (Simpson).
<i>Comet</i> (Kaye); extra fine.	<i>Splendour</i> (Kaye); petals finely formed, beautifully flaked, and of a most brilliant scarlet.
<i>Duke of Devonshire</i> (Barren-ger).	<i>William the IV.</i> (Wilson); extra.
<i>Dido</i> (Holyoake).	
<i>Firebrand</i> (Hardwicke).	

ROSE FLAKES.

<i>Antonia</i> (May).	<i>Lady Gardener</i> (Ely).
<i>Ariel</i> (May).	<i>Lovely Ann</i> (Ely).
<i>Apollo</i> (Barrenger).	<i>Lorenzo</i> (May).
<i>Beauty of Skircoat</i> (Mansley).	<i>Magnificent</i> (Schofield); new and fine.
<i>Constellation</i> (Baildon).	<i>Maid of Athens</i> (Hepworth).
<i>Duchess of Devonshire</i> (Fletcher).	<i>Princess Royal</i> (Puxley).
<i>Flora's Garland</i> (Brooks).	<i>Princess (Christian).</i>
<i>Harriet</i> (Wilson).	<i>Romer</i> (May).
<i>King John</i> (May).	<i>Rose of Allendale</i> (Benn).
<i>Lady Ely</i> (Ely).	

PURPLE FLAKES.

<i>Beauty of Woodhouse</i> (Mansley).	<i>Marego</i> (Ely).
<i>Bonny Bess</i> (Mansley).	<i>Napoleon</i> (Lee).
<i>Companion</i> (Netherwood).	<i>Poins</i> (May).
<i>Earl Spencer</i> (Barrenger).	<i>Premier</i> (Milward).
<i>Earl of Wilton</i> (Holland); extra fine.	<i>Prince Arthur</i> (Puxley).
<i>John Wright</i> (Ely).	<i>Princess Charlotte</i> (Turner).
<i>Mayor of Oldham</i> (Hepworth); fine.	<i>Queen Victoria</i> (Evans).
	<i>Squire Megnell</i> (Brabbin).
	<i>Squire Trow</i> (Jackson).

PROPERTIES OF A GOOD CARNATION.

In order to be able to know the points laid down by florists, as rules to know or distinguish a good Carnation, I cannot do better than give them to the readers of THE COTTAGE GARDENER, especially such as may be just beginning to grow this fine class of flowers. It is, as the above list shows, divided into five classes; namely:—1. Scarlet Bizarres. 2. Pink or Crimson Bizarres. 3. Scarlet Flakes. 4. Rose Flakes. 5. Purple Flakes.

Bizarre is a French word, meaning odd or irregular; the flowers in those classes have three colours, which are irregularly placed on each petal. *Scarlet Bizarres* have that colour predominating over the purple or crimson, but the *Pink* or *Crimson Bizarres* have more of these colours than the scarlet. *Scarlet Flakes* are simple, white grounds, with distinct stripes or ribbons of scarlet. *Rose* and *Purple Flakes* have these two colours upon a white ground. The properties in other respects are—

1st. *Form*.—The flower should be round, the petal either perfectly flat on the under side, or each petal very slightly cupped. Each petal should be stout enough to keep its place firmly, and should be smooth at the edges without any notches. The first or lowest row of petals, called the guard petals, should be in number at least six, and should lap over each other to form the circle. The next row should be shorter, and the next shorter still, rising up to the centre, which should be quite full, the whole to form, as it were, a half ball.

2nd. *Colour*.—The ground colour should be a clear white without a spot on it. The stripes should be clear and distinct from the white, the edges of each stripe should be smooth, not shading off confusedly into the white, neither should any white specks be on the stripes. In Bizarres, the three colours cannot be too distinct; dark colours, such as crimson or purple, should

be as dark as possible, contrasting brightly with the scarlet, pink, and white.

3rd. *The Pod* or Flower-cup.—This is green, and should be long and large, to enable the flower to burst equally on every side. Many varieties require a ligature to prevent the bursting unequally, but there are some that do not require this, and these are very desirable. Most kinds of *Picotees* open equally without being tied.

T. APPLEBY.

THINNING OF CROPS.

In a season like the present, when we hear of so many disasters befalling various crops, a chapter on *thinning* may, perhaps, at first sight appear superfluous; but as seasons like the present have been followed at times by periods of extraordinary productiveness, it may be proper here to point out the evils which an omission of thinning sometimes occasions, as well as the benefits arising from its performance at the right time, and in a proper manner.

In this important practice I at once affirm, that extreme measures have never had my concurrence. We have all heard, over and over again, the advantages of "thin sowing," and some agricultural enthusiasts have gone the length of saying, that a man might carry sufficient corn in his pocket to sow half-an-acre of ground, and have, accordingly, set forth the folly (not to say sin) of wasting such valuable food, in merely throwing it away. Now, this reads well in a reported speech or paragraph, yet, somehow or other, that mighty personage, the "Public at large," does not seem to place much confidence in it; and the few who have tried it find it not to answer their expectations, otherwise it would be repeated. Though I am far from thinking that the same quantity of seed-corn per acre will be wanted when a better description of husbandry is adopted, still I am far from thinking that the time has yet arrived for its universal application to the extent its most ardent advocates insist upon; but, as this is the farmer's business, I must beg pardon for the digression, which, however, was only for the purpose of showing that thin sowing, or a thin plant, was not altogether a horticultural affair, because our brethren of the wholesale way had attempted the same thing on a larger scale, and with that varied success which leaves the matter still undecided.

Garden productions are usually held to be too important and essential to be risked for the mere object of saving a little seed, the expense of which bears but a small proportion to the anxiety and loss which attends the failure of a crop. On the other hand, we are fully alive to the necessity of thinning, or even "thin seeding," certain portions of the ground which are under a robust crop, and capable of enduring the attacks of vermin, and the other vicissitudes to which they are liable. These considerations render it imperative on us to ascertain the nature of the plants under trial before too much reliance be put on the wholesale system of merely putting into the ground the number of seeds wanted to produce permanent plants. This will do with many things which are sufficiently robust to ensure their escaping the mishaps to which many little plants are subject. Of the class which may be deemed "certain growers," the common *Broad Bean* stands pre-eminent, coming up with a strength, and being so unpalatable to vermin, as at once to bid defiance to the "small fry" which attack the more diminutive Turnip and others. With that admirable providence which we see carried into detail everywhere, the Creator has presented us with innumerable seeds of the latter, compared with those of the former, no doubt, with the wise end of feeding the numerous family of the

smaller animals which continually wage war against them, yet to furnish a sufficiency on which the future crop is to depend. The gist of the subject is, that when seeds form an expensive item in the crop, economy in their use must be enforced by all means; but where they form only an insignificant portion of the value of the crop, then do not let a false economy induce you to endanger it for the sake of a pinch of seed.

This brings us to the more important part of our subject, and on which we may, with perfect safety, give an unqualified opinion, *i. e.*, the thinning of such crops in due time. This has been little dwelt upon by horticultural writers, probably from the fact, that they think that everybody must know that such and such crops require proper thinnings. Yet, there are often sad mistakes made in omitting to perform this necessary operation at the right time; plants that ought to be making to themselves an elongated root downward, exercise this power with the stem upwards, to the sacrifice of the more legitimate object; while plants which are wanted to attain a certain amount of lateral growth are wedged up so as to render that development impossible.

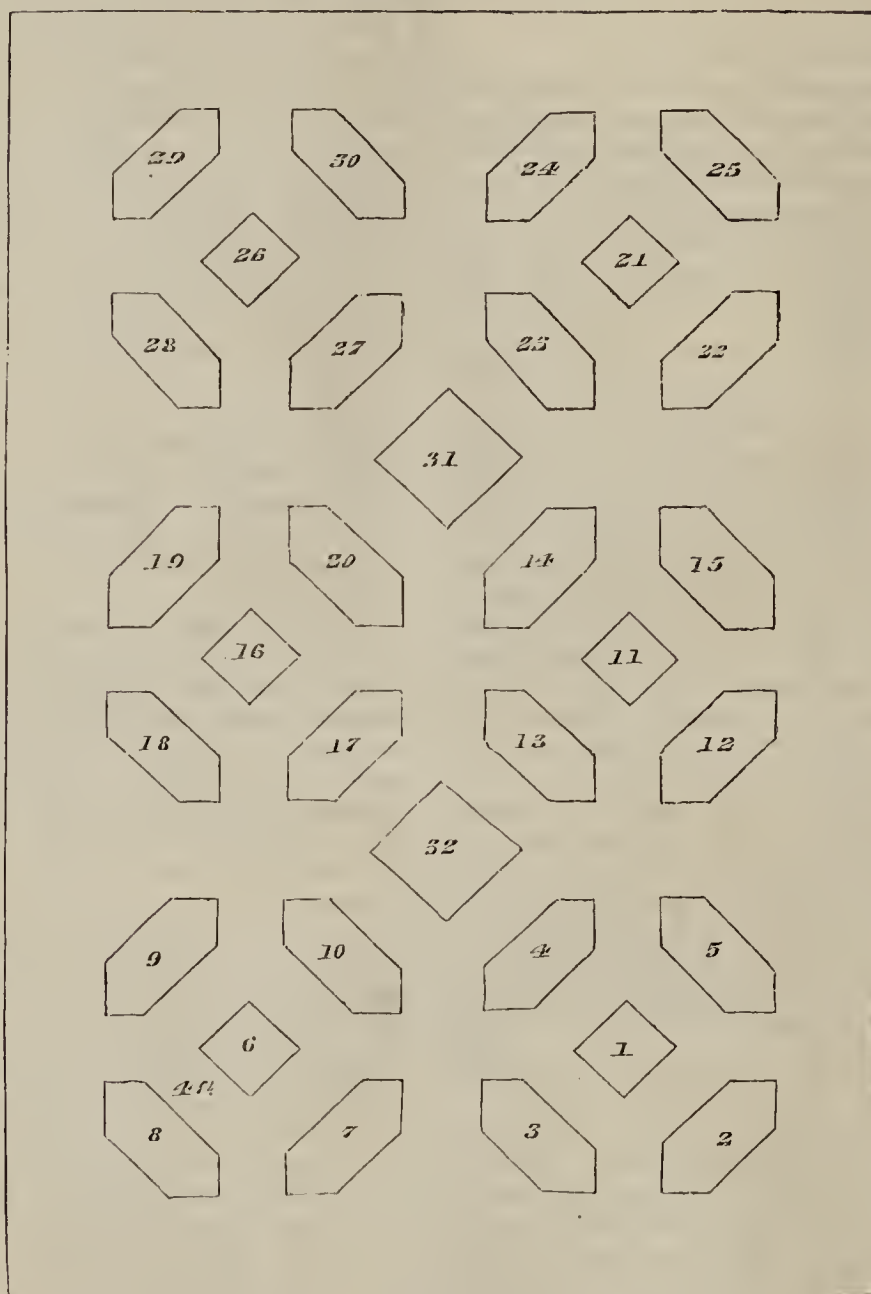
These evils, with many more, are the result of not attending in time to the proper thinning of plants intended to attain some degree of robust growth and perfection. But while we say "Thin in time," it is not necessary, in every case, to do so with severity, for, like the disbudding of fruit-trees, it is better to be done piece-meal, and in such a way as to reserve a sufficiency of plants from which to select the proper ones for permanent purposes.

All small crops had, therefore, better be sown tolerably thick at first, and, as they progress, a judicious thinning must take place, followed by another thinning when the plants attain that size which denotes they are no longer in danger to fall a victim to the enemies of their more early days. This second thinning must be performed before anything like injury be rendered to the plant by their coming in contact with each other, or before they attain that size whereby they will derive injury at the hands of the operator by his rubbing through them in the course of his work; for although nature is very accommodating in that respect, by quickly restoring plants to their wonted sturdy condition, yet we think the effort made to do that causes so much loss. For instance, when a plot of *Turnips* has been neglected thinning until the leaf-stalks have elongated to an extent as to be no longer capable of enduring their own weight alone, it is evident to all that a loss has been sustained, in the first place, by the plant itself attaining that improper growth; and, secondly, by its having it all to remodel again; besides which, there is the serious loss which the ground has endured by the drain on its resources which the removed plants have occasioned; and this is no light matter, for the plants destroyed have been withdrawing those very juices from the ground the proper crop is most in need of. This, therefore, affords one of the best of reasons for performing the duty as early as possible. In fact, there are very few cases in which thinning is likely to be done too soon. On the contrary, it is too often delayed until a later period than it ought, and the consequence is the losses we have enumerated above; it is, therefore, not only necessary for the amateur to be vigilant in his attention, at the proper time, to the various root crops which require a considerable extent of space, but he must also, when needs be, give his *French* and common *Beans* a thinning, taking away, perhaps, one-half of them. *Onions* must be well thinned in time; if they be in rows a foot apart, then about six inches in the row will do for them, unless the ground be very rich and good, when more room may be given. Even small plants intended for early transplanting are often injured by running too long unthinned. *Lettuces*

are soon rendered useless if that duty be delayed. Even *Spinach* is thinned with advantage, although the summer crops (where the press of other kinds of work renders it difficult to attend to all) often get neglected; in fact, we scarcely know of any production to which

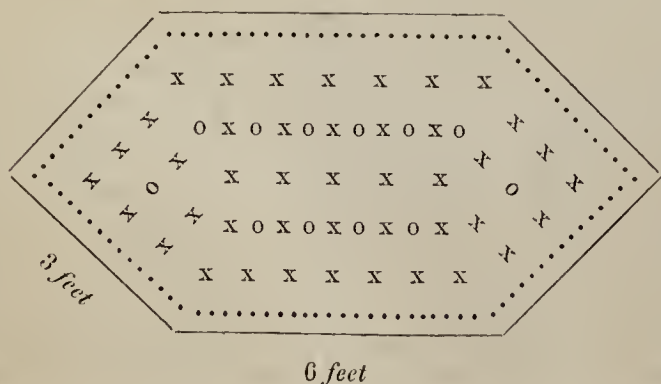
thinning may not justly be applied; and, in conclusion, we beg to repeat the often quoted sage advice which a worthy patron of the craft gave to his *protégés*, as he sent them forth to the world, "Sow thick, thin in time, and keep on good terms with the cook." J. ROBSON.

FLOWER GARDEN PLANS.—No. 6.



HOUSE.

"I ENCLOSE for your criticism a plan of a Geometrical Flower Garden, which I laid out last spring. The ground is open to the south, having the house on the north, a row of beech on the east, and a clump of birch on the west.



The beds are upon grass, and my method of planting them with a view to contrast and succession of flowers, will be understood by reference to the preceding enlarged scale of a bed.

"The dots round the edge represent the early flowers—Crocuses and Snowdrops. The second succession is represented by an o, and the third and fourth by an x.

"The beds numbered 1, 6, 11, 16, 21, 26, 31, and 32, are permanent evergreen beds, which serve to ornament the garden in winter. The bulbs and hardy herbaceous plants remain in the ground the whole year, and the annuals, which are either autumn-sown or raised in a hotbed, are transplanted into the beds when requisite.—AN AMATEUR IN LANCASHIRE."

BLUE. 25.		WHITE. 24.		RED. 30.		YELLOW. 29.	
1. Ne plus Ultra (Crocus)		1. Victoria Regina		1. David Rizzio		1. Yellow Dutch	
2. Aubrietia Deltoidea		2. Double white Daisy		2. Erythronium Dens canis		2. Cowslips	
3. Heliophila araboides		3. Schizopetalon Walkeri		3. Lychnis Alpina		3. Helianthemum guttatum	
4. Purple Petunia		4. White Petunia		4. Cuphea striggilosa		4. Calceolaria	
21. Hardy Heaths.				26. Pernettya macrantha.			
YELLOW. 22.		RED. 23.		WHITE. 27.		BLUE. 28.	
1. New large Yellow		1. Prince Albert		1. Snowdrops		1. Sir Walter Scott	
2. Primrose		2. Double red Daisy		2. Erythronium Dens canis		2. Gentiana acaulis	
3. Sphenogyne speciosa		3. Chænostoma fastiagatum		3. Alyssum maritimum		3. Linum Austriacum	
4. Calceolaria		4. Cuphea striggilosa		4. Ditto ditto		4. Ditto ditto	
31. Rhododendron ferrugineum.							
RED. 15.		YELLOW. 14.		BLUE. 20.		WHITE. 19.	
1. Large mixed Blue		1. Cloth of Gold		1. Ne plus Ultra		1. Caroline	
2. Hepatica triloba		2. Polyanthus vulgaris		2. Double Primrose		2. Double Primrose	
3. Calandrinia speciosa		3. Alyssum saxatile		3. Campanula carpatica		3. Campanula carpatica	
4. Scarlet Geranium		4. Ditto ditto		4. Ditto ditto		4. Ditto ditto	
11. Kalmia glauca.				16. Kalmia angustifolia.			
WHITE. 12.		BLUE. 13.		YELLOW. 17.		RED. 18.	
1. Victoria Regina		1. Versicolor		1. New Golden Yellow		1. David Rizzio	
2. Hepatica triloba		2. Hepatica triloba		2. Double Primrose		2. Double Primrose	
3. Nemophila insignis		3. Nemophila insignis		3. Linum flavum		3. Eucharidium concinnum	
4. White Verbena		4. Lobelia erinus		4. Ditto ditto		4. Scarlet Geranium	
32. Rhododendron hirsutum.							
BLUE. 5.		WHITE. 4.		RED. 10.		YELLOW. 9.	
1. Sir Walter Scott		1. Mont Blanc		1. Blucher		1. Yellow Dutch	
2. Gentiana acaulis		2. Saxifraga oppositifolia		2. Anemone coronaria		2. Adonis vernalis	
3. Anagallis indica		3. Glyce variegatum		3. Viscaria oculata, var. nana		3. Mimulus guttatus	
4. Lobelia erinus		4. Ditto ditto		4. Scarlet Verbena		4. Ditto ditto	
1. Daphne cneorum.				6. Ledum buxifolium.			
YELLOW. 2.		RED. 3.		WHITE. 7.		BLUE. 8.	
1. Cloth of Gold		1. David Rizzio		1. Snowdrops		1. Versicolor	
2. Draba brachystemon		2. Saxifraga oppositifolia		2. Anemone coronaria		2. Anemone coronaria	
3. Sanvitalia procumbens		3. Saponaria Calabrica		3. Iberis sempervirens		3. Kaulfussia amelloides	
4. Ditto ditto		4. Scarlet Verbena		4. Ditto ditto		4. Heliotrope & Verbenamix'd	

[Here is an excellent plan for a flower garden in the regular style ; and, had it not been that the owner of it is a perfect stranger to me, I could find cause to believe that he obtained access to our flower garden ledger at Shrubland Park, and took a leaf out of it, for his list, or rather the way of showing it, corresponds literally with the exact plan that has been followed out by Lady Middleton for the last dozen years.

I never saw so many flower-beds before so much of one size, but I quite admire the system, and I earnestly entreat young gardeners to study the whole, as there is a *system* in every move throughout—the colours, the plants, and the way the beds are numbered from the centre of each group, each group being complete in itself, having its match three

different ways, 32 being the centre for four groups, and 31 the same, and only six groups in the whole, with all the centres in evergreen, are all as systematically planned as the figure is regular in itself. In reading off the style of planting for succession, keep the eye constantly on the *key-bed* in the corner till every bed and plant is fixed in the memory. Even those who will prefer other kinds of plants for the different seasons will do well to follow and study the key-bed. I had this plan and the list pasted up over the fire-place in my bed-room for the last two months, but the old fairy who used to help me to plant flower-beds in my dreams never came near me this time, and I am afraid to begin altering the arrangement at the eleventh, if not the twelfth hour.—D. BEATON.]

ALLOTMENT FARMING.—JUNE.

Now will industry have an opportunity of showing what may be effected by individuals in earnest—Now the goodness of God becomes more particularly manifest, in rewarding honest industry by the increasing comforts of the homestead, as well as that peace of mind, and inward satisfaction, which is above price, and which ever accompanies the consciousness of duties well performed. There is now not a single

crop in the allotment but will be benefited by a little attention. Weeds will continue to advance ; crops will become too crowded ; the soil will become baked in consequence of dashing rains ; and a constant forecast must be exercised as to a regular occupation of the soil judiciously.

We will commence with WEEDS, those robbers of the food, and interceptors of the light to useful crops. Let us implore

our cottage friends to beware of their advances. Digging, hoeing, hand-weeding—each, or all, must be resorted to, according to the weather and other circumstances. To those who have an opportunity, I recommend digging, as performing a double service—cleaning and cultivating. Few are able to estimate the value of *spade-cleaning*, for we must coin a name for this process. How many times have most of us seen labourers hoeing and raking when the soil was damp, and it may be a recurrence of rains during the process. I have repeatedly known as much time wasted thus as would have dug over the plot in question; and who can for a moment place the two operations on a par, as to their utility. Digging down weeds *before seeding* admits air into the soil, and promotes the free dispersion of moisture; indeed, it is what may be termed a summer's fallow. I do not say dig through all crops, some regard must be paid to the character of the roots if the operator is at work between rows or drills. There are cases in which much damage would ensue to crops by preferring the spade to the hoe; however, this is easily judged by the workman. It is no part of his business to hack the fibres of growing vegetables. Where it becomes necessary to use the hoe, the operator should consider that there are two distinct processes which may be carried out by this tool—the one simply weed killing, the other by hoeing deeply, a loosening of the soil operation. Now, these, performed by the same implement, may be separate or combined, dependant, of course, on circumstances, such as the weather, the character of the crops, &c. The hoe should never be used except the surface of the soil be dry, and then if there be any weeds they should be raked off at the same time.

ROOT CROPS.—By the time these remarks reach our readers the *Mangold* will be above ground; the *Swedes* up, or at hand; *Carrots* in a similar position; and *Parsnips* a good plant. Hand-weeding in the lines is the first thing to resort to, or hand-hoeing. I prefer running the hand through them first, and this may be done when the hoe cannot be usefully employed. About a week or so afterwards, the plants may be singled out on the first dry period; afterwards a good hand-hoeing will be very beneficial. Little more will be requisite until the “setting-out time;” that is to say, the final thinning, after which they will enjoy another hoeing, and after this deep culture between the lines. These remarks apply to drilled root crops in general.

The young *Carrot* plant just rising must be carefully guarded from slugs and snails; they are particularly partial to the *Carrot*. Lime may be had recourse to; this, applied on a dewy evening, just at night fall, thousands may be speedily destroyed. I have known *Parsnip* crops also much injured by them.

Those who want to succeed some early crops as *Potatoes*, with the *Swede Turnip*, may still sow a bed, and although after the usual time, they will be soon enough for this purpose. As I have before remarked, it is better to sow a little later for this purpose, than that the plants should be “drawn,” by standing over their time, thickly, in a crowded seed-bed. I may also repeat, that where seed-beds of *Swedes* have been thinned-out for early planting, and a portion left, that such may be planted with advantage when the bulbs are as large as ducks' eggs.

Those who fear the grub amongst their *Carrot* crops, will do well, if a bed can be spared, to sow it with the *Early Horn Carrot*. If the soil be tolerably rich this may be sown to advantage any time before Midsummer.

POTATOES.—The *Ash-leaved Kidney*, and other early kinds, will require their *final* soiling, if not done already; in doing this every weed must be rooted up. Some persons object to soiling, or earthing, but they have assuredly wrong impressions, if the crop is intended for market, or to eat. I have grown early *Potatoes* in all forms, but I have invariably found them liable to become greened if left bare of soil, especially the *Ash-leaved Kidney*, which has a tendency to breed its tubers at a high level. Darkness is absolutely necessary as to eating *Potatoes*. The later crops of *Potatoes*, too, must be seen to in time; nothing is worse than by delaying the necessary operations to be compelled to trample on their young and delicate stems. Let, therefore, all operations be well carried out before the stems get too much abroad; or, as the Cheshire folks say, before the rows “shake hands” with each other.

And here I may point to the probability of the *disease* returning. No man can say that it may not, on some future occasion, visit us weeks earlier; the consequence of which it is fearful to contemplate. Let every one, therefore, be prepared with something to take the place of such a failure. If the cottager or allotment holder cannot, through the disease, carry a full crop of *Potatoes*, he must produce something in their room which will prove an equivalent in value, if possible. I know of nothing so eligible as the *Swedish Turnip*, which will transplant so easily, and for which there is ever a demand. I before spoke of the seed-bed of *Swedes*; it is only sowing a bed, or row extra; it is better to have a few hundreds to sell than to have to buy.

CABBAGEWORTS.—*Green Kale*, *Brussels Sprouts*, and *Savoy*s are the chief. Now, if I held an allotment near a thriving town, and more especially near a railway line—a most desirable thing for an ingenious and industrious man, who knows how to make the best of everything—I would crop my ground with a keen regard to the demands of the nearest good market. As for my family, I should rest satisfied that if I could but make cash by a little extra ingenuity, I should be in a position to sustain domestic comforts. Amongst the various things eligible for this purpose, the family of which I am now writing offer many chances. It is not so much of any particular kind, as of the season of produce, and the many little “dodges” necessary to steal a march on other competitors. In this class may be named *Sea-kale*; this is in the power of every allotment holder to produce annually, when it is realising from one to two shillings per dish in our markets. The limits of allotment monthly advice will not permit me to go fully into this subject; I must take another occasion; in the mean time, I throw out such hints as pioneers to open the way to ingenious minds.

For ordinary purposes, an additional sowing of the *Brussels Sprout* may be made now on good soil. I am here supposing that they will be used as secondary crops, succeeding some early summer crop. All the other greens will, of course, be above ground, and will require weeding, perhaps thinning slightly.

And here let me remind our friends, that about the middle of June is a capital time to save what are termed *Coleworts*; these might be made a most profitable crop, near towns, if rendered compatible with the rest of the cropping. Any *Brocoli*, or green plants, getting too forward, and for which the ground will not be ready for a month or so, should be pricked-out to strengthen, at about two or three inches apart. Those who require Michaelmas *Cauliflowers*, for sale or otherwise, must sow in the first week of June, and get their plants forward carefully.

PEAS will require little attention if justice has been done them in due time; stuck, of course, they will be, if sticks be needed, and a little soil will have been drawn to their stems. As to sowing *Peas* now, it is nonsense; it is all very well for Dukes and Lords.

BROAD BEANS.—These, too, will be in a position to require no care but gathering the produce when ready for the bacon, unless the last sowing may possibly require a little soil to prevent their being pushed about by the storms. No more *Bean*-sowing may be allowed little gardeners until next February.

RUNNERS KIDNEY BEANS will, I hope, have been sown in the early part of May; they will want stakes or some kind of conductor; strings do well, or, indeed, they may, by continual pinching, be made tolerably profitable without any support. In *Kidney Beans*, the *dwarf kind*, the little gardener can do nothing now as to succession crops. Those up will require soiling to prevent wind action.

LEeks are a good cottager's vegetable. Those who mock the Welchman little think what a treat he has in his *Leeks*. Whether it be the sulphurous character imparted to the *Onion* tribe of plants, or whether it be the natural succulence of the *Leek*, when grown strong and blanched like *Celery*, I know not, but certain it is, that many palates are agreeably surprised at the richness, mellowness, &c., of a good, fat, blanched *Leek*, of some two inches diameter, if served up with a piece of fat bacon, or, what will be a tolerable substitute, a little butter.

LETTUCES.—Capital things for either man or swine, but they are rather expensive to produce; for unless a *Lettuce* be bulky, succulent, and blanched, it is nothing, and to pro-

duce them bulky, a heavy run must take place on the manure-heap. Still, they are full of quality, and must not be despised. Our friends, however, who make profit the chief thing, must not sow until the middle of the month, when either *Ady's Cos.*, or the *Bath Cos.*, will, on good soil, turn out well. And now let me recommend, once more, cleanliness in cultural operations, added to a jealous eye on the manure-heap of the futuro year. R. ERRINGTON.

THE RECENT POULTRY SALES.

WHEN Mr. Sturgeon, at the Birmingham show of 1850, put £5 each upon his pen of Cochin fowls, he himself believed and intended that price to be a prohibitory one. Two of his birds were, however, claimed, but the purchasers were thought to have taken leave of their senses. Two short years have scarcely passed over us since, and although no stock multiply so fast, or come so quickly to maturity, as poultry, a moderately good bird can scarcely be had for the price which for the very best was then thought so outrageous, and a first-rate one will anywhere readily command three times the money.

If proof were required that the few, comparatively, who then took an interest in poultry matters have, in so short a period of time, succeeded in procuring a very large accession to their numbers, the results of the recent sales would alone afford ample evidence of it—so true is it that if the supply be not equal to the demand prices must inevitably rise. Other causes, no doubt, contribute to keep up the market value of very first-rate specimens, not the least of which (as most of our best breeders can testify) is, that out of a very large number of chickens, bred from the very best of stock, but a small proportion can be placed in the first class of merit, while a very large part are only fit for the kitchen.

A nobleman, who was very successful in breeding greyhounds, having been asked the secret of his success, replied, "I breed a great many, and I hang a great many." It is the same in breeding other animals, and poultry, we think, especially; and if, as is the case just now, half the world is in want of superior birds, and the other half have not sufficient of that quality wherewith to supply the demand, competition follows, and prices, for a time, greater or less, as it may be, rule high.

This brings us to the subject with which we headed this article—"The Recent Poultry Sales," by which we mean the extensive sales which have of late taken place by auction in London. The first of these of any consequence was that of Mr. Sturgeon's far-famed stock, to which almost every breeder is more or less indebted. As we noticed this sale soon after it took place, we shall not advert to it particularly here, further than to say that, although higher prices have since been obtained, we doubt if so good a lot has been submitted to public competition before or since. This was followed by Mr. Punchard's sale, at which a fine lot of birds were displayed. Then came the sale of Mrs. Herbert's beautiful whites, which afforded to amateurs the opportunity of procuring specimens of a breed theretofore possessed by few, and which, for those living away from towns, are sure to become especial favourites. Omitting minor collections, Mr. Potts next brought to the hammer a collection second to none in quality, and combining all the best blood extant. This sale was distinguished from its predecessors for having produced the greatest prices for individual specimens which had ever been obtained,—single birds having been sold for the large sums of £42, £36 5s., £28 7s., £23, £22, &c. Mr. Fox's sale followed next in succession, and the quality of his stock is proved by the fact, that several of the single lots fetched as much, or nearly so, and one bird actually over-topped the highest of the prices we have just quoted as having been produced by those of Mr. Potts; for while "Sir Robert" brought Mr. Potts £42, "Nelson" realised for Mr. Fox £43, at which sum he was sold to Mr. Sturgeon, by whom he had been bred. The fact of Mr. Sturgeon giving such a price as this for a bird bred by himself, proves how highly he, as well as the public who competed with him for the possession of it, estimates his own stock, and, moreover, that he has determined that neither pains nor expense shall be spared to keep it up to that point of excellence

which it has, beyond all question, attained, and which the possession of such a bird as "Nelson" (probably the best ever shown in public) cannot fail to enhance. The last important sale was that of Mrs. George, who is indebted, we believe, for her best blood to Mr. Sturgeon's strain. Some beautiful birds were among this lot, and they realised corresponding prices.

We have adverted to these sales, not with a view to particularize the specimens comprised in each of them, so much as to consider the effect of the high prices generally realized upon the poultry world, and its future prospects. Upon some of the causes of these prices we have already observed. That they will continue for a time, those who know how very many of our wealthy classes have begun to take an interest in poultry and poultry-keeping will scarcely doubt. When first John Bull determines to do a thing, he seldom does it by halves. That feeling is enhanced, when there is a little of what is termed "fancy" in the way, and the competition afforded by our numerous poultry shows will add a zest to the whole. Moreover, the feeling—undoubtedly, we conceive, a just one—that poultry, as a pleasant and profitable branch of rural economy, has long been much neglected, has generated a desire to make amends for the past by taking better care for the future; and this again has been increased by the success attained in so short a time. The consequence has already been, that where there was one person who ever gave the quality of his poultry a thought, there are now a hundred, and may soon probably be a thousand. To meet the demand of these increasing numbers, the care bestowed by the present race of breeders (if the term is allowable), will, no doubt, produce a much greater number of good birds every successive season. These, as we have said, multiply fast; the best of each stock will be chosen; there will be a greater supply of strains from which to obtain a cross, and these means combined will ultimately produce a supply to meet the demand, however much it may be extended. The ultimate consequences, as we think, will be that a first-rate specimen, of whatever variety, will command a high price, as is the case with all stock—a good Spanish hen, for instance, being worth more in the market at this moment than at any previous period; although the writer of this has kept them for more than twenty-five years; but, on the other hand, prices generally will, after a time, lower very considerably, so that tolerably good birds will be procurable at a moderate rate. But we anticipate a much more important effect, and believe that it has already partially commenced, from the sales which we have been noticing, combined, no doubt, with the competition which takes place at the different shows, and the pains which are bestowed upon the breeding of birds for both purposes; we mean that, the breed of poultry generally will be, and is rapidly improving around us, by the dissemination of good varieties, instead of the tag rag and-bob-tail lot of mongrels which, only a short time ago, alike disgraced the poultry yards of rich and poor. As prices become more moderate, and good birds are placed within reach of all, this effect will extend itself, and amateurs will, we hope, make the sales of their surplus stock subservient to the great object for which the different societies and their exhibitions have been established.

In order to do this, and at the same to keep up the interest in these matters which already prevails among the higher classes of amateurs, it is necessary that the utmost fairness and plain dealing should exist on the part of those who submit their stock to public competition. We have heard rumours of great unfairness, with respect to pedigrees and crosses—that birds, for instance, have been advertised as "imported," or as bred from this or that stock, or strain, which afterwards proved to be anything but what had been represented. Complaints have also reached us of "puffers" having been employed at sales to run up prices to an unfair amount. We wish it to be distinctly understood that we do not intend here to point at any individual, or at any particular instance, although we shall not hesitate, if such misconduct be pursued, to expose the perpetrator of it. Our object, from first to last, in supporting the different exhibitions, and giving our humble assistance to the societies established for the purpose, has been the single one of promoting, to the utmost of our ability, the improvement of the purer and more valuable varieties of Domestic Poultry, and their dis-

semination, as widely as possible, throughout the country; for we shall not be content, until they reach the poultry-yards of the poor as well as of the rich. That such will soon be the case we confidently anticipate, and as one means to that end, we have been induced to advert to the recent poultry sales, and their probable consequences.—L.

THE BOURNE, OR INTERMITTING STREAM OF CROYDON, IN SURREY.

By Cuthbert W. Johnson, Esq., F.R.S.

THE copious stream of bright, and rapidly-flowing water which usually, after wet seasons, rises at the foot of the chalk hills to the south of Croydon, is known by the local name of "The Bourne." It commonly commences about the end of December, and continues till April or May, when it gradually disappears. In the season of 1852-3, as it began to flow at an earlier period than usual (November), so it flowed with unusual copiousness, and began to subside much sooner than commonly, and ceased altogether by the end of March.

I have endeavoured, by the aid of some of the old inhabitants of the parish, to ascertain some of the periods at which the Bourne flowed during the last forty years, and to contrast the outburst with the rainfall of the immediately preceding period. I am indebted to the obliging communication of R. Glaisher, Esq., of the Royal Observatory, of Greenwich, for the subjoined information as to the amount of rain which fell in each year since 1814. This will be found in the following table, which gives the year, the amount of rain in inches, and the flow of the Bourne, as accurately as I have been able to ascertain.

Year.	Rain.	Observations.
1815	22.5	
1816	30.1	
1817	29.0	
1818	33.4	Bourne out copiously. (F. Cooper.)
1819	31.1	
1820	26.2	
1821	34.5	
1822	27.7	Bourne out copiously. (F. Parrett.)
1823	27.1	
1824	36.3	
1825	24.5	Bourne out very copiously. (F. Parrett.)
1826	23.0	
1827	24.9	
1828	31.5	
1829	25.2	Bourne running in January. (H. Stedall.)
1830	27.2	
1831	30.8	
1832	17.7	
1833	23.0	
1834	19.6	
1835	24.9	
1836	27.1	Bourne running in February. (H. Stedall.)
1837	21.0	
1838	23.8	
1839	29.6	
1840	18.3	Bourne running in February. (H. Stedall.)
1841	33.3	
1842	22.6	
1843	24.6	
1844	24.9	
1845	22.4	
1846	25.3	
1847	17.8	
1848	30.2	
1849	23.9	Bourne running slightly. (C. W. J.)
1850	19.7	
1851	20.15	
1852	34.2	Dec. Bourne copious. (C. W. J.)

We find, then, from this table, that whenever the rainfall in any one year was equal to about thirty inches, the Bourne made its appearance about the close of that year, or early in the ensuing; and that it flowed *copiously*

whenever the fall was considerably above thirty inches—as in 1818 (33.4 inches); 1821 (34.5 inches); 1825 (36.3 inches); 1841 (33.3 inches); and in 1852 (34.2 inches).

The late Dr. Mitchell appears to have paid considerable attention to the Natural History of these intermitting springs or streams, and in May, 1839, he read a very interesting paper before the Geological Society, from which I have extracted the following passage, which has also been quoted in Brayley's "History of Surrey":—

"In connection with the swallow holes [of the river Mole], we may here notice the outbursts of water on the surface, which, in some localities in Surrey, are very remarkable. From what has been already advanced respecting the geological structure of the county, it will be easily understood how overpowering reservoirs of water may be formed in the lowermost strata of the chalk, and find an issue through the fissures of the rock. A beautiful stream of this kind occurs near Lewes, in Sussex, taking its rise in a chalk valley on the side of the Brighton road, near Ashcombe, and flowing through the vale of Southover, into the river Ouse; it is called 'the Winterbourne Stream,' from its occurrence during the winter months, the valley where it has its source, and a great part of its bed being dry during the summer and autumn. In Surrey, outbursts of water from the chalk occur at the Bourne Mill, near Farnham; near the church at Merstham, and at the spring near the church at Croydon. Occasional outbursts take place at the Bourne near Richmond House, where, during the spring of 1837, the water flowed in great abundance, and continued six weeks. In the same year, a rivulet burst forth in Gatton Park, between Merstham and Reigate."

I am indebted to my friend, Mr. T. W. Flower, for the following notice of the geological features of the district from whence the Bourne waters of Croydon issue, and through which they flow:—"One of the most remarkable geological features of Surrey, is the very elevated ridge of chalk which runs across the county and the adjoining county of Kent. It begins near Farnham, in the west, and runs to within a few miles of Rochester, and is usually known by the name of the North Down, in contra distinction to the ridge called the South Downs, which run in nearly a parallel direction near the coast of Sussex and Kent."

It is on the northernmost declivity of *this* ridge that the Bourne takes its rise; in a little hollow close to the lodge of Birchwood Farm, and near the Half Moon on the Godstone road. It then runs nearly west along a valley or gorge formed by the chalk hills on each side, down to Purley, where it turns to the north, and runs along Smithane Bottom, and at the foot of Haling Park, till it reaches the town of Croydon. Until it reaches the town, it runs in rather a narrow channel, the range of hills on each side approaching rather closely to each other.

The town of Croydon stands on a kind of platform at the mouth of the Gorge, through which the Bourne takes its course. The soil is a very coarse, angular, flint gravel, resting upon chalk, and of a depth varying from five or six feet, to twenty or thirty feet. This stratum is particularly permeable, and, no doubt, is always thoroughly saturated with water whenever the Bourne flows. This fact could be easily ascertained, if it was found necessary, by sinking a shaft through the gravel, ascertaining the rise and fall of the water in the gravel with reference to the rise and fall of the Bourne.

The south and south-east parts of the town are situate, for the most part, on the London clay, and are not so likely (nor, indeed, at all likely) to be water-logged, as the south-east and eastern parts.

With regard to the causes which produce the flow of the Bourne, it is to be observed that such phenomena are not at all uncommon in chalk districts. Both in the neighbourhood of the South Downs and the North Downs similar intermitting springs are found, and one was lately running at Preston, in Sussex. It has been usual to ascribe the origin of such springs to caverns in the chalk soils, having an opening outward in the nature of a *siphon*, and it has been thus supposed, that whenever, from an excess of rain, the level of the water has been raised in the cavern to the height of the bend of the siphon, the discharge commences, and continues until the reservoir is entirely emptied, probably of the accumulations of several years.

It does not appear, however, to be necessary to suppose the action of a siphon, to which theory, indeed, several obvious objections may be made. The chalk, doubtless, contains many large caverns or reservoirs, which are fed by the numerous fissures which everywhere traverse the strata. In a very rainy season, like the last autumn, these caverns would, of course, be filled faster than the natural or usual outlets would carry the water off, and the consequence would be, that the water would find for itself some other vent, and through this would continue to flow as long as the head of water was sufficiently full. This theory seems much more feasible than the siphon theory. If water is poured into a vessel faster than it can run off, it is evident that it must continue to run long after the supply has ceased.

With regard to the influence of the Bourne upon the sanitary condition of the town of Croydon, it may be noticed, that from a very early period, a notion appears to have existed that these outbursts of water were indications of the approach of unhealthy seasons.* The Bourne water of Croydon is in this way alluded to by John Werkworth, in his Chronicle (he flourished in the reign Edward IV.). He places the Croydon Bourne amongst the "Woo Waters" or Woe Waters of England, for he explains that—"Englyhmen whenne thei dyd fyrst inhabyde this land, as soone as thei see this watere renne thei knewe welle it was a tokene of derthe or of pestylence, or of grate batalye. For all that tyme thei sawe it renne thei knewe welle that woo was commynge to Englande."

The same popular superstition of there being a connection between the appearance of the Bourne, and the ill-health of the district, evidently existed when Camden wrote. The author of the Britannia, who resided at Chiselhurst, about seven or eight miles from Croydon, observes, when speaking of Croydon (*Edition by Gibson, 1695, p. 159*)—"For the torrent that the vulgar affirm to rise here sometimes, and to presage derthe, and pestilence, it seems hardly worth so much as the mentioning, tho perhaps it may have something of truth in it."

There is to this day an opinion very common amongst the labouring population of Croydon, that the water of the Bourne is unwholesome, and equally common is the undefinable notion, that "when the Bourne is out, something will happen to Croydon."

It was noticed in the case of the epidemic which prevailed so extensively in Croydon, in the autumn of 1852, and winter of 1852 and 1853, that there was a remarkable parallel movement in the progress of the fever, and the rise and fall of the Bourne water in the great porous gravel-bed on which the chief part of Croydon is built.

The fever began to be marked about the 7th of October, 1852. About this day the water in the gravel began to rise. The fever continued to increase, and the Bourne water still rose in the soil till about the first week in January, 1853. Till this time the fever increased in malignancy; it attained its most fatal type about the last week of December; the Bourne water in the subsoil was now at nearly, if not quite, its maximum.

About January 24, there was a sensible decrease in the water which saturated the subsoil; there was now a marked decrease in the number of the fever cases.

About February 2, the Bourne water was subsiding at the rate of an inch per day. The fresh fever cases were now scarce.

It may not be uninstrutive to endeavour to ascertain the rate of mortality in Croydon during those years in which the Bourne was out, with those in which it did not flow. It would certainly appear, from the number of burials at the old church of Croydon during the months of November, December, January, February, and March, in the two last Bourne-water years, that the rate of mortality was then materially increased in comparison with the corresponding period of the following years. The subjoined table contains the number of burials in Croydon, recorded in the parish register, on the two last occasions when the Bourne

was out, and also during the same months of the ensuing year—

		Burials.		
Nov.	1840	..	16	The Bourne copiously out.
Dec.	—	..	19	
Jan.	1841	..	22	
Feb.	—	..	14	
March	—	..	9	Ensuuing season. Bourne not out.
		—	80	
Nov.	1841	..	10	
Dec.	—	..	11	
Jan.	1842	..	16	Bourne out slightly.
Feb.	—	..	8	
March	—	..	13	
		—	58	
Nov.	1848	..	26	Next corresponding season. Bourne not out.
Dec.	—	..	21	
Jan.	1849	..	26	
Feb.	—	..	22	
March	—	..	20	
		—	115	
Nov.	1849	..	16	
Dec.	—	..	17	
Jan.	1850	..	18	
Feb.	—	..	17	
March	—	..	16	
		—	84	

So that the burials at Croydon old church, in five months, on the two last occasions when the Bourne flowed, previous to 1852-53 (1840-41, and 1848-49), were more numerous by 22.5 per cent., and 31.7 per cent. than in the corresponding periods of the succeeding years. We may discern, then, as the flowing of the Bourne follows wet and unwholesome seasons, why our ancestors, in more superstitious days than ours, not altogether without reason, fell into the error of regarding the phenomenon as the har-binger of public "woo."

APIARIAN'S CALENDAR—JUNE.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

THE SEASON.—Much has of late years been said of bad seasons, but as far as my experience goes, this has been, in my opinion, certainly the worst; for even up to the present time (the middle of May) there has not yet been one good day for bees; and the little that they have been able to do has been done by snatches of an hour or so, and the loss of life at such times, from storms and cold winds, has been great; and where feeding weak stocks has been discontinued, they are dying daily. Some writer has said that we have two good honey years in ten; if it really be so, surely the coming one must be a good one.

SWARMS.—Early swarms there can be none this year, for the population in the best stored hives increases very slowly; indeed, the loss of life, from the above and other causes, almost keeps pace with the hatching of eggs.

QUEEN WASPS.—These insects, which are frequently seen in considerable numbers in March, have yet scarcely made their appearance; I have seen but one.

PUTTING ON SUPERS.—I would recommend much caution being used in the present season in putting on glasses, or small hives. Do not do so too soon, but rather suffer the bees even to be a little inconvenienced for want of room for a day or so.

TAYLOR'S IMPROVED. STRAW BAR-HIVE.—Mr. Taylor has kindly sent me one of his new hives, which I hope to be able to stock this year. Those persons, and those only, who have used bars, can duly appreciate the many advantages arising from them, but there has always appeared some little difficulty in attaching them to a round hive, which Mr. Taylor has obviated, and in a very simple manner—indeed, the simplicity of the hive altogether is one of its greatest recommendations. The dimensions of the hive are four-teen inches clear, inside diameter, by seven-and-a-half-inches in height to the upper side of the bars; the latter are eight in number. Mr. Taylor has overcome the main difficulty attending bars in a circular hive by attaching them

* The common people, always prone to consider any natural phenomenon of rare occurrence, as a prodigy or portent, seem to have regarded the flowing of the Bourne with superstitious dread, looking upon it as the harbinger of sickness and sorrow, rather than the natural result of those causes which produced that sickness.

to a thin hoop, which is pinned within side the top edge of the hive, occupying very little room. The exterior of the hive is cylindrical, and straight throughout. To cover the bars, a loose straw circular mat is used, lying flat upon them, and fixed in its place by four or five pointed iron pins. Through the centre of the mat is the usual hole for the working of supers of any kind that may be preferred; and those who choose may make use of a wooden adapter. The whole is extremely simple, but it is recommended to attach guide combs to the bars, or else to wax them along the centre. It is obvious, that unless care is taken to make the bees work their combs in straight lines at the outset the bars are rendered useless, and the mischief cannot afterwards be corrected. I believe Messrs. Neighbour and Sons, of London, are making these hives for sale. I ought to have said the bars are one inch-and-an-eighth wide, and the space between each two a quarter-of-an-inch.

TO CORRESPONDENTS.

GARDEN PLAN.—S. C. asks our opinion of the following arrangements for circular lawn beds:—"1, Centre, a clump of *Christmas Roses* [Old China]; 2, round them a ring of *Winter Aconites*; 3, then, in patches, a ring of *Crocuses*; 4, then, in patches, a ring of *Snowdrops*; 5, then a ring of yellow *Alyssum*; 6, Edging, a ring of white *Alyssum*. [All very good indeed.] In May, bedding plants to be placed between the patches of 3 and 4, to be succeeded, on the approach of frost, by *Chrysanthemums* in pots. [An excellent plan.] This bed would have something in flower all the year round, if I mistake not, and never look shabby. If six sorts are too many, leave out No. 4, and plant a strong-growing bedder in No. 3. [Rather put 3 and 4 in one ring.] Or this:—1, Centre, *Hyalcinths* and *Gladiolus* planted together; 2, *Winter Aconite* and *Autumnal Crocus*; 3, *Tulips* (late), to be replaced by *Asters*; 4, *Crocuses* and *Snowdrops*; 5, Edging of *Alyssum*. [This is even better than the first arrangement.] In an oval border, divided into six quarters, I am trying now:—1, Seedling *Pansies*; 2, *Ranunculus*, with *Eschscholtzia* sown among them; 3, *Anemones*, with *Nemophila* sown; 4, *White Pinks*, to have *Verbenas* added between; 5, *Intermediate Stocks*; 6, *Late Tulips* and *Gladiolus*, planted together; and a small centre of *Lilium lancifolium*. Might this latter have been preceded by *Crown Imperials*? [Yes, very well.] The two beds which want replenishing again first, I shall fill with *Asters* and *Enothera macrocarpa*."

NEWLY-SOWN GRASS (A. B.).—Newly-sown grass for a lawn should be frequently rolled, and kept close with the scythe, without strong water of any kind, and all broad-leaved weeds to be pulled up in damp weather.

SOIL FOR GENTIAN (B. R.).—Deep, rich soil, inclining to clay, and damp at the bottom, is the best soil we ever found for the Spring Gentian (*Gentiana vernalis*). On such soil the plants lived for thirty years without a gap in the rows, nor failed to bloom most profusely every year, and they were never disturbed all the time, except reducing them to proper bounds in the spring. On dry, thin, or poor soils, and on chalk bottoms, they are of no use, and it is only waste of money trying them that way.

DIELYTRA SPECTABILIS (Rustic Robin).—Your friend is certainly mistaken—we ourselves knew every Fumewort in the kingdom thirty years ago; but it is as hardy as any of the Pæonies. The name of the old plant you mean is *Saxifraga sarmentosa*; but why not send us a leaf, which, with your own description, would determine the name at once?

FLOWER GARDEN (Violet).—You have planted this very pretty figure very well indeed. We would not alter a plant in it, and, between ourselves, 3 and 7 will take very little harm, in such hands, planted for the first two years as "*Violet*" proposes; but the best plant for that way is the white and blue *Campanula pumila*, divided in April, and mixed plant for plant.

LIST OF EARLY TULIPS (Ibid).—*Van Thol*, single and double; *Rex rubrorum*, very double red. *Golden Standard* and *Royal Standard*, *Marriage de ma fil*, and a few more that are named in a previous volume, will all flower together, and at the same time. *Double Scarlet Anemones* come in at the same time if they are planted early in September; it is not safe to leave them in the ground all the summer, as, if it is a wet one, they are too soon in growth, and the flowers are spoiled in the spring. The *Single Anemones* take no harm from being left in the ground, and then they also would come in April. *Polyanthuses* and *Auriculas* are not half so much grown as they deserve to be for spring beds; we have seen them, and had them, by the thousands, and now is not too late to sow them for next spring. *Arabis grandiflora* makes a full bed all through April; *Alyssum saxatile* is a little later; and pray gather a few scores of our native *Ranunculus*, called *Pilewort* (*Ficaria verna*)—they make the prettiest edging in the world, planted two inches apart, and four inches from the grass or box. The double white *Wood Anemone* makes a bed or an edging for an April and early May bed.

SCILLA PERUVIANA (P. S. J.).—This is one of those old-fashioned things about which "some new plan of flowering it" is not at all likely to be given in our day. When the soil suits, it flowers every year, and where it does not no gardener can make it do so, or think enough of it to try the experiment. As you have failed with it for fifteen years, in the very kind of soil that we would recommend for it, our advice is, that you root out every morsel of it, and have nothing more to do with it. It is waste of time contending for plants that are not suitable for one's garden, when so many plants obey our will without difficulty.

INDUSTRIOUS SHANGHAI HEN.—*Guernsey* writes to us thus:—"On the 2nd of March I set a Cochin pullet, of the latter end of July hatch. She produced no chickens out of fifteen eggs; and another hen, out of the same laying of eggs, set the day after, hatched only four. I, however, tried her for two days with the four chicks, but found her a very bad mother, and so gave her fresh eggs, after proving her for a day or two on

bad eggs. She sat again, and, as chicks hatched so badly this season, shortly after chipping they were brought into the house, and were hatched wrapped in flannel in a box, with a two-quart tin bottle filled with hot water. I did not attempt to give her these chicks, but turned her into a coop by herself for two days, to inure her to the change, and then permitted her to go among the other fowls. In ten days from the time she was taken from the nest, and she was then very light, she began to lay, i.e. on the 1st of May, and has laid five eggs in the six days. Thus, after setting seven weeks, she began to lay ten days after being taken from her nest." Your hen that frequently continues twisting her neck, as if endeavouring to swallow her food, you had better not physic until you have other symptoms; it is only one of those nervous affections to which Shanghaes are liable.

FOWL WITH RATTLING IN THE THROAT.—W. W. S. has "a Poland cock, which appears quite well, with the exception of a rattle in his throat as he breathes, as if he had a cold." [Most probably a slight case of cold, causing increased secretion in the windpipe. The effect will probably cease in the warm weather if the bird is kept dry and warmly housed; if not, try one grain of simple powder of ipecacuana at night.—W. B. T.]

GAPES IN CHICKENS.—M. R. says:—"I had hoped that before this some of your correspondents would have given some information as to the cause of the worms in the windpipe of chickens. I am induced again to trouble you on the subject, as all my young broods are still dying from the same complaint, and the only chance I have of rearing a single chick is by baying them twice a-day smoked with tobacco." [The origin of the worms which infest the various parts of the bodies of animals is exceedingly obscure; one thing alone is certain, that they are perfectly distinct from any that exist in other situations, and that they cannot be imbibed with the water. Has the writer tried to dislodge them by thrusting a feather (stripped of the vane, except at the tip) down the windpipe, and then twisting it round and round? As an experiment, the tip might be first dipped in calomel. Four or five drops of turpentine every day, in barley-meal, are sometimes recommended; and a very successful breeder informs me that he gives the chickens wheat steeped in turpentine. I am very anxious to try the effect of opening the windpipe below, and injecting some remedies in that way, as the worms might be reached without interfering with the lungs. Can any of our readers oblige me with patients, to be returned if cured?—W. B. TEGETMEIER, Tottenham, Middlesex.] We shall be much obliged by any of our readers sending fowls affected either with these worms or with Roup to Mr. Tegetmeier, as we wish these diseases, of which so little is accurately known, to be considered by him. The results would be published in our pages.

SPANISH FOWLS.—A Subscriber asks—"What is the cure for a disease which has attacked a fine young Spanish cock, causing his comb to assume a blackish hue, and become flabby. A hen has the same appearance, and seems very ill. They are thoroughbred." [It is quite impossible to advise upon such slender information as is here given; the comb always becomes discoloured in illness of any kind, and I can only say avoid the quack poultry remedies of rye, and butter, and salts, which I cannot conceive to be beneficial in any poultry disease that I have ever seen.—W. B. TEGETMEIER.]

DISEASED SHANGHAES (S. T. Wells).—Mr. Tegetmeier would be glad of the opportunity of examining the diseased fowls, if convenient to Mr. Wells. Perhaps Mr. W. will forward the address where they can be seen, to Mr. Tegetmeier, Tottenham, Middlesex.

FRENCH SEEDS (R. M. E.).—There is no doubt but the seeds are from Algiers, and that a hotbed is the best place to rear them in, and you will soon see what they are. There is nothing new or particularly good expected from that quarter. The word *Ketnios* is probably the Algerine name.

PROPAGATING DIELYTRA SPECTABILIS (Mrs. E.).—After flowering, your splendid plant, which has stood the winter, will go on growing till the October frost, then let it rest all through the winter, and when you see the buds swollen by the end of February, take the whole mass up and divide it as you would an old Dahlia root early in May, and replant the pieces with dry, sandy soil under and around them. It will also grow from cuttings all the summer, in a little close heat.

NEST EGGS.—The following is a good suggestion for our Staffordshire friends. J. N. says—"Could you recommend some of your friends in the pottery districts to make nest eggs from similar materials of what white cups, &c., are made? I fancy they would find ready sale for them. They could always be kept clean, and would last for a life time with care."

INDIGESTION IN SHANGHAI COCKERELL.—H. M., Durham, says—"I have a White Shanghai Cockerell, about 10 months old, purchased of Mr. Bowman, of Penzance, and he has thriven well until about a month ago, when he looked rather dull, and the food he eats comes through him undigested. The woman that has charge of the poultry has given him castor oil, and also a little salts in barley-meal and bran, which appears to relieve him; but, whenever he gets boiled rice or barley, he appears to be affected in the same way, and has great difficulty in passing it." [This is, as far as I can judge, a case of slight inflammation, or irritation of the stomach—fully treated, at page 103 of the present, and 450 of the last volume. Thoroughly-cooked food, as scalded meal, &c., should alone be given; salts and Plummer's pill are both injurious; but one grain of calomel may be tried probably with advantage.—W. B. TEGETMEIER.]

OPACITY OF THE EYE IN FOWLS.—A correspondent, whose letter, with the reply, has been mislaid, asks advice respecting the removal of a film from the eye of a fowl, caused by injury received in fighting. In the human subject, endeavour is always made to cause the absorption of these films, and, in many cases, with success. The treatment usually adopted, and which I should recommend in this case, is to blow from a small tube, such as a quill open at both ends, a small portion of calomel, say one grain daily into the eye. I am not sure, however, but that the action of the third eyelid, used by the bird for cleaning the ball of the eye, may not cause its immediate and effectual removal, in which case, I should try the effect of a lotion formed of three grains of nitrate of silver in one ounce of rain water; a few drops to be used daily; care must be taken in using this lotion, as it stains the fingers very permanently. No very rapid improvement must be expected, nor must any

attempt be made to remove the film by mechanical means, which would very greatly increase the evil.—W. B. TEGETMEIER, *Tottenham*.

CHITTEPRATS (*Edwin*).—Our remarks in another portion of this paper refer to your enquiries. You speak of the "Silver Pheasants" being called "Chitteprats." This must have been a mistake, since the latter provincial name is applied to the Pencilled Hamburgs, while the so-called "Pheasants" birds, or "Moonies," are the "Spangled Hamburgs" of the principal Exhibitions, as at Birmingham and the Metropolitan. How the Silver Poland, a tufted bird, of distinct form and marking, could have been so called, we are at a loss to imagine. Nothing is now more required than a uniform system of nomenclature for the poultry-yard.—W.

CHYSIS BRATESCENS (*R. F. S.*).—There is no English name for this orchid. It was figured in the *Botanical Register* for 1841.

VINERY (*Margaret*).—Your proposed plan is that adopted every day. No Vine will do better in your greenhouse than the *Black Hamburg*. *Datura ceratocaulon* is a hardy annual; sow it now in pans in a greenhouse; harden off the seedlings, and get them out into the borders as soon as you can.

POLYANTHUS SEENLING (*J. Willison*).—It is good, but nothing of a novelty.

SAVINGS' BANK (*Poor Man's Well-wisher*).—We shall be glad to see your plan. You had better leave the Laurel hedge alone.

DAHLIAS AS A BEE-FLOWER (*F. M. G.*).—We have seen it stated that Dahlias are injurious to Bees, but we are not convinced that they are.

ROYAL AGRICULTURAL SOCIETY (*J. D.*).—We do not see that because the Society only takes charge of the live stock on their arrival at the show-yard, that this renders it more necessary to send an attendant with the poultry than when they are sent to any other exhibition. The Committee of no Society takes charge of, or holds itself responsible for, any poultry, until it is delivered into their custody at the place of show.

BRITISH WINES (*An Inquirer*).—We have no knowledge on the subject. Any Exciseman in your neighbourhood will tell you.

PANSIES AND POLYANTHUSES (*A Two-years' Subscriber*).—They were entirely withered. Flowers should be packed in damp moss, and in a box sufficiently stout not to be crushed by the Post-office stampings.

WHAT IS A FLORIST'S FLOWER? (*Ibid*).—We cannot give you a better answer than this from *The Cottage Gardeners' Dictionary*:—"FLORIST'S FLOWERS are those, which by their beauty, or fragrance, power to produce permanent varieties, and facility of cultivation, are so largely in demand as to render them worthy of cultivation as an article of commerce." They must be capable of increase by slips or offsets; be capable of producing fresh varieties from seed; and be sufficiently admired to be grown in collections.

SLIMY GRUBS (*R. Bosworth*).—These are the larva of a Saw-fly, called *Selandria æthiops*. You will find a drawing and description of it in our 58th number.

BUSHEL OF POTATOES (*Ibid*).—A bushel of Potatoes should be as many as can be got into a circular measure with a flat bottom, and not heaped above the upper edge, containing 2218 cubic inches. The weight of Potatoes which such a measure can contain is at the most sixty-four pounds.

SHANGHAI PULLETS (*Subscriber near Ipswich*).—These "resorting to their nests daily, but never laying," show, unmistakably, that there is something wrong with their egg-system. You have probably got them too fat. Give each a teaspoonful of castor oil; then, on the day following, a pill containing one grain of calomel, and one-twelfth of a grain of tartar emetic. Keep them on moist and less nutritive food.

BAN BUTTER.—*J. B., Westmorland*, says—"The complaint of 'Dairymaid' of 'bad-flavoured butter and milk,' I have no doubt arises from the cows eating *Allium ursinum*, or 'Ramsen,' here called 'Ramps,' a plant well-known, rather resembling in leaf the Lily-of-the-Valley, also with a white, round flower. [This is the Wild Chive, mentioned at page 111.] The only cure I know, is to have this weed cut up by the cow-keeper. This is easily done, as the plant generally grows in sheltered places, under coppice-wood, where the cows ought to be fenced out."

CRYSTAL BASKETS (*Rustic Robin*).—To produce green crystals, mix sulphate of iron (green copperas) with the alum; to produce blue, mix with the alum blue vitriol (sulphate of copper); and to produce yellow crystals, try chromate of lead (yellow chrome), mixed with the alum.

SAUNNERS ON THE VINE (*Nelson*).—You can have it through any bookseller.

POTATO MURRIAN (*Casual*).—We are very glad that you have known how to prevent this disease "for years." You, of course, are making a fortune by it; and when you have become wealthy to your heart's content, perhaps you will publish your panacea for the benefit of your poorer neighbours.

EDGINGS FOR WALKS (*Sydney*).—The best edgings for garden-walks that we know of are those called "Hogg's Edging Tiles." They are all that you desire, being "cheap, useful, and durable," and, we may add, ornamental also. They can be laid down at less price than the old-fashioned Box edging. Any particulars you may require can be had by applying to Mr. Hogg, 13, Giltston Road, Brompton, London.

CALENDAR FOR JUNE.

ORCHID HOUSE.

AERINES, SACCOLABIUMS, VANDAS, and other allied Indian plants, will now be growing freely, and will require abundance of water both at the roots and over the tops. Any on blocks that are growing freely should have some moss tied round the block to retain moisture a longer time. **AIR** should now be liberally given almost every day, unless cold, wet days should intervene. The air openings should be so constructed as not to allow a rush of cold wind over the tops of the plants. **BASKETS**: the plants in them will be making their new growths, and will require to be dipped in tepid water at least once a week, or even oftener in very hot weather. **BLOCKS**: syringe twice a day, in the morning by seven o'clock, and in the afternoon about four. **CATESETUMS, CYRTOPIDIUMS, CYCNOCHES**, and their like, give plenty of water at the root, taking care

that none lodges amongst the young leaves for any length of time. **DENDROBIUMS**: many of this fine family will, towards the end of the month, have finished their growth. They should then be placed in a cooler house, and less water given to them. **HEAT**: the natural heat of the atmosphere out-of-doors renders less fire necessary. During the day, unless in cold, wet weather, none will be needed, a little every night will yet be useful, especially in the Indian-house. **INSECTS** will breed rapidly during this warm season; every means must be resorted to, to keep them under. **MOISTURE**: the air of the house should be kept full of moisture during this month. Many of the roots will be dangling in the air, sucking up, as it were, the moisture in it. Moss on the outside of the pots, and on the leaves, will accumulate greatly with the heat and the moisture, the pots must be washed, and the leaves sponged frequently, to open the breathing-pores of the latter. **OFFSETS** on the stems of *Dendrobiums* should be all taken off, to encourage growth from the bottom; they may be made plants of if required. **PLANTS IN FLOWER** will last much longer if removed into a cooler house. **SYRINGE**: this instrument will, during the month, be in constant requisition. In using it, let the water from it fall gently upon the plants, imitating a gentle shower of rain. **SHADE** must be applied during bright burning sunshine. **WATER**, apply liberally to all growing plants, but be sure and use soft or rain water. A slate tank is the best thing to contain it; iron vessels should by all means be avoided. **WEENS**, destroy constantly; but such plants as ferns, heaths, except creeping species, that come up amongst the rough peat, may be allowed to grow, they will shade the roots and serve as indicator, when they flag, to show that the compost is dry and requires water. T. APPLEYBY.

PLANT STOVE.

ACHIMENES: those early potted will now be in flower; supply them freely with water; repot the last batch to flower late. *A. picta* put thickly into wide shallow pans, and grow on to flower at Christmas. **AMARYLLIS**, going out of bloom, and their bulbs ripening, place in a cold frame, and give no water to induce them to rest. **AIR**, give liberally all day, and in hot, close nights leave a little on. **APHELANTHA AURANTIACA**, grow on in a hot pit to bloom in winter. **BASKETS**, where used, keep moist by dipping and syringing frequently. **BARK-BENS**, renew, if the heat declines. **CUTTINGS**, put in if required; pot off such as have struck root. **CLIMBERS**, on the rafters, train, and keep within bounds. In pots, train round the trellises; attend to them constantly, or they will soon get out of order. **FRANCISCEAS** done flowering, place in a cold frame to rest. **GARDENIA**, treat in a similar way. **GESNERAS**, repot young plants, put in cuttings of. **GLOXINIAS**, the same; every leaf will make plants if put in as cuttings. **HEAT**, keep under, no fire heat is required now. **INSECTS** of all kinds, destroy diligently, especially the red spider and mealy bug. **IXORAS**, the large specimens will now be in flower; keep them moist at the root, but refrain from syringing over the bloom; young plants repot, and tie out young specimens. **MOISTURE** in the air, keep up by flooding the walks daily. **PLANTS IN FLOWER**, keep cool, and shade them, this will prolong the bloom. **POTTING**, do whenever it is necessary. **SEEDS** of many stove plants may yet be sown; transplant seedlings when just out of the seed-leaf. **SYRINGE**, use daily. **WATER**, apply liberally, but not so as to sodden the soil. **TOP-DRESS** the whole stock of plants during the month, it refreshes and gives them a neat, clean appearance; wash the pots if mossy. **WEENS**, constantly eradicate. **WORMS** in pots, destroy with lime water. T. APPLEYBY.

FLORIST'S FLOWERS.

AURICULAS and **POLYANTHUSES**, place on ashes behind a north wall, in the shade; keep clear of weeds, and constantly supplied with water. Seedlings prick out in shallow pans or boxes. **CARNATIONS** and **PICOTEES**, place on the stage; put stakes to, and water freely. **CHRYSANthemUMS**, pot; plant out some old plants to layer and form dwarf plants. **DAHLIAS**, finish planting; put stakes to early; put in cuttings of new or scarce kinds. **FUCHSIAS**, pot off cuttings; train specimens, and water occasionally with liquid-manure. Sow seed of **HOLLYHOCK**; put stakes to; prick out seedlings. **HYACINTHS** out of bloom, take up and store. **INSECTS**, destroy. **PANSIES**, water freely in dry weather; put in cuttings of; sow seed, and transplant; layer long, straggling shoots; shade from hot sun. **PINKS**, tie to sticks; place Indian-rubber rings round the buds when more than half-grown; transplant seedlings; put in pipings. **RANUNCULUSES**, keep very moist; place shades over them as the blooms expand. **ROSES**, look to the buds, and destroy by crushing the worm in the bud. Put such as are in pots, and have done blooming, in a cold pit, or in the open air in a shady place. **TULIPS**, cut off all seed-vessels, and take up the bulbs as soon as the leaves decay. **VERBENAS**, in the border, shade from sun; peg down the long branches in pots; tie out, keep moist, and shade. **WATER**, give to all in pots freely. T. APPLEYBY.

FLOWER GARDEN.

ANEMONES, take up as leaves wither; dry and store. **ANNUALS** (Hardy and some Tender), plant out to remain, in showery weather best; sow for late crops; some (hardy) may be sown, b. **AURICULAS**, continue shading; plant offsets; prick out seedlings. **BASKETS** or clumps, form of greenhouse plants. **BENS**, attend diligently to recent planted; water and stir them in dry weather. **BIENNIALS** and **PERENNIALS**, sow, if omitted, b. Box edgings elip. **BULBOUS ROOTS** (Tulips, Jonquils, &c.), not florists' flowers, remove offsets from; dry and store; may transplant some, or keep until autumn; autumn-flowering, as *Colchicums*, &c., take up as leaves decay, separate offsets, and replant, or not until end of July. **CARNATIONS** in bloom, attend; aid the bud-pod to split with a pair of narrow sharp-pointed scissors; bandage buds, to prevent bursting, with Indian-rubber rings, or tape; water every second day; tie to supporters, &c.; prick out seedlings; make layers. **CHRYSANthemUMS**, plant out to layer next month. **CYCLAMENS**, transplant. **DAHLIAS**, finish planting out, b. Dress the borders assiduously; neatness now stamps a gardener's character. **FIBROUS-ROOTED PERENNIALS**, propagate by cuttings; shade and water. **FLOWERING PLANTS** generally require training and support. **GRASS**, mow, roll, and trim edges. **GRAVEL**, weed, sweep, and roll. **HENCES**, elip, e. **LEAVES** and stems decaying, remove as they appear. **LIQUID MANURE**, apply occasionally to all choice flowers. **MIGNONETTE**, sow for late bloom, b. **MIMULUSES**, plant out. **PEONIES** (Chinese), water freely with liquid

manure, or they will not flower finely. PINK SEEDLINGS, prick out; make layers. PIPINGS (or cuttings) of Carnations and Pinks may be planted. POTTED FLOWERS, dress, stir earth, and water regularly. RANUNCULUSES, take up as leaves wither, dry and store. ROSES, bud, lay, and inarch; fumigate with tobacco to destroy the aphid or green fly; Roses out-of-doors, wash with tobacco or ammonia water. SALVIA PATENS, pinch down centre stem to make it bushy. SEEDLINGS of Perennials and Biennials transplant. SEEDS (ripe), gather in dry weather. SEED VESSELS, remove, to prolong flowering. WATER, give freely and frequently to all newly-moved plants, and to others in dry weather; early in the morning or late in the evening is the best time. *Brompton Stocks* and *Moss's Intermediate* should be sown on a north border. Sow another succession of the *low annuals* to flower late, b. Peg down *Salvias*, and for a time, until the layers are rooted, cut off the flowers. VERNENAS, peg down to cover the beds sooner. TULIPS, continue to shade to prolong the bloom, b.; towards c. expose them to full sun to ripen the bulbs; take off seed-vessels for the same purpose. SLIPS of Double Wallflowers, Sweet Williams, and Rockets, put in either under hand-glasses or under a north wall or low hedge. D. BEATON.

ORCHARD.

APHIDES, destroy on all trained trees. APRICOTS, thin for tarts; destroy caterpillars. APPLES, search for caterpillars, and dress for American blight. CURRANTS, stop watery wood. CURRANTS (black), water if dry; cleanse from fly. CHERRIES, free from aphides. DISBUD all trained trees. FIGS, thin the young wood, and stop. FRUIT of all kinds thin where too thick. GOOSEBERRIES, free from caterpillars. INSECTS in general try to extirpate. MULCHING, practice where necessary. NECTARINES: see Peaches. NUTS dress away suckers. PEACHES, thin both wood and fruit, and stop gross shoots. PLUMS, cleanse from aphides, and disbud. PEARS, disbud and stop. RASPBERRIES thin suckers. STRAWBERRIES, water if dry, clean runners, and put something to keep fruit clean; beware of mice. STRAWBERRY (ALPINE), clear runners from, and water. STOPPING, practice constantly, where necessary. THINNING, practice both with fruit and wood. TRAINING, commence and continue. TOP-DRESSING, attend to. VERMIN, destroy. VINES, thin shoots, and stop. WATERING, attend to. WASPS, destroy. R. ERRINGTON.

FORCING STOVE.

ATMOSPHERIC MOISTURE, secure liberally, and continue to increase. CUCUMBERS, keep thinned and stopped; give plenty of atmospheric moisture to. CHERRIES, water liberally, and cleanse from aphides; ventilate very freely. CAPSICUMS, shift finally and place in a warm situation. FIRE-HEAT, dispense with as much as possible. GRAPES, thin, stop, and tie shoulders of the late ones. GRAPES ripening, remove a few laterals. LIQUID MANURE, apply where size and strength are required. MELONS, attend to setting, water freely, but not frequently, when swelling; thin the vines very frequently, and attend to linings; use dressings and fumigations to avert the attacks of insects. NECTARINES, treat as Peaches. PEACHES, disbud, and stop gross shoots; apply liquid manure, and thin fruit. PEACHES RIPENING, remove those leaves or portions which shade the fruit. PINES, shade for a few hours if the sun is intense; shift liberally the succession; water all when necessary, and keep a jealous eye on bottom-heats. STRAWBERRIES, turn out healthy plants from forcing-house; they will fruit in September. SHADING, practice with delicate things, during intense sunshine. VINES, attend to disbudding and stopping. VENTILATE freely. WATERING, neglect not. R. ERRINGTON.

GREENHOUSE.

AIR, admit freely to all the hardier plants, such as cinerarias, caleolarias, &c., as the cooler they are kept the longer will they bloom, and the freer will they be from insects. The HARDIER PLANTS should now be placed out-of-doors, in a sheltered place, to make room for fresh importations from the pits; and here arises the great difficulty in the case of those who have only one house, as the plants removed, intended to be kept for another year, would have been all the better to have been kept in until the fresh wood was made. Many winter-flowering things, such as *Daphnes*, *Cytisus*, *Heaths*, &c., may now be set in a sheltered place out-of-doors, and safely kept; but they will neither bloom so fine nor yet so early as they would have done had they been kept longer in the house. Another difficulty arises from the wish to make this single greenhouse suitable for plants in bloom, requiring a cool atmosphere; and plants done blooming, such as early *Camellias* and *Azaleas*, that require a high temperature, and a moist atmosphere, to enable them to make their wood and set their buds early. Any greenhouse may now be used admirably for this purpose, merely by shutting it up early in the afternoon: syringing the plants at the same time, and give but little air during the day; but then this would soon ruin the health and appearance of such things as *calceolarias*, &c., in bloom; though it would answer well for bringing on large fuchsias and geraniums for succession. Hence the importance of screens, &c., for securing different temperatures. PLANTS placed at first in a sheltered place, must in general be fully exposed before autumn, to perfect their wood. Altogether, after the few days shading at first, the pots, or rather the roots in the pots, suffer more from complete exposure than the branches. The great thing is to avoid sudden extremes. Cacti will now want watering freely, and full exposure to sun, to have the flowers fine, or perfect the wood of the early kinds. CUTTINGS insert, and pot off when struck; many of the first struck will make fine plants for autumn and the beginning of winter. CLIMBERS—many tender annuals, such as *Thunbergia* and *Ipomea*, may now be introduced, either upon pillars or trellises. Nothing suits annual kinds better than a young tree, or the branch of a tree, well stored with twigs. *Kennedys* and *Zichyas* fasten to pillars and trellises, so that the flowering shoots may hang gracefully and negligently. The same may be said of *Pussifloras*, &c. CLEANLINESS must be particularly attended to. No plants can be healthy with yellow or dust-encrusted leaves; and the sight of such is always a speaking reproach. The system of picking off every yellow leaf that presented itself as you went round with the watering-pot would prevent the woe-begone aspect which yellow-leaved plants always wear. It always shows a want of system when a set period must be appointed for picking the dead leaves from plants. GRAFTING may

still be done, in the case of myrtles, oranges, *Daphnes*, *camellias*, &c.; but, as it is getting late, you must try and obtain scions from retarded plants, and then place them in a gentle hotbed, and keep them close until the union is effected. ORANGES and LEMONS should have the blossom thinned and impregnated where fruit is wanted. SEEDLINGS of all kinds prick off. See what was lately said about *Achimenes*, *Gloxinias*, *Gesneras*. Every one with a cucumber-box, and a cupboard in his kitchen, may stock his greenhouse with them in summer. SHIFT everything that requires it, for all vital action is now rapidly progressing. SOILS procure and husband in a dry state; for top-spit turf, nothing is better than stacking it in narrow ridges, and thatching it to keep it dry. This kept a twelvemonth will be fitter for use than mould regularly turned and chopped ever so often during the season. TORENIA ASIATICA is now a fine object in a greenhouse; it looks most elegant in a vase elevated a foot or eighteen inches with sprigs, and the most of the shoots allowed to dangle over the sides of the vase. WATERING will be required oftener; and, in small pots, sometimes twice a-day. Manure-water may be given liberally, to promote luxuriant growth when wanted. Let it be weak, however, and given often. Young hands often make great blunders in using it too strong, especially when plants are young. R. FISH.

KITCHEN-GARDEN.

ALEXANDERS, earth-stir and earth-up. ANGELICA, earth-stir, or earth-up, as the case may require, and promote strong growth with liquid-manure water. ASPARAGUS seedlings, keep clear of weeds, and earth-stir to promote growth; beds in cutting sprinkle with salt once a week during the cutting season, and earth-stir often with some pointed implements; discontinue cutting about the 20th. BASIL plant out in rich warm borders in full crop, and water well previously to planting, should the weather be dry. BROAD-BEANS, plant out for late crops in cool situations, in a rich soil, and water well at the time of planting in dry weather. BEETS, thin out, and fill up any vacant spaces; do this of a dull evening, with care, and water well at the time. BORAGE, thin ten inches apart, and save seed from autumn-sown. BORECOLES, prick out of all kinds four to six inches apart every way. BRUSSELS SPROUTS the same. BROCOLIS the same, and plant out finally of early kinds, such as the *Cape* and *Walcheren*. CABBAGES, prick or plant out finally. CARROTS, thin out main crops five to seven inches apart, and use the hoe freely among them. CARDOONS, thin out and attend to. CAULIFLOWERS, prick out, or plant out in succession; basin up the early crop, and water well, and with manured water at least once a-week, and look over and invert a few leaves down over the heads of those that are turning in, to preserve them of a white colour. CELERY, prick out, and plant out finally and water well at the same time. CUCUMBERS, plant out under hand-glasses on a little bottom-heat; keep the glasses close until the plants are established, after which inure them to the open air by tilting, &c. Those in a forward state, let the earth round the hills or ridges be well forked up for the roots to run out; stop and train out their stems; those in pits and frames should be weekly attended to, as to stopping and thinning, and all decayed leaves removed, and a top-dressing given if required. CAPSICUMS, plant out in warm borders. ENDIVE, make a little sowing of both kinds, Batavian and Green Curled, for early use. GARLIC, SHALLOTS, and UNDERGROUND ONIONS will be fit to take up towards the end of the month, and should be dried off well before being stored away for use. HERBS of all kinds should be cut when in flower for drying or distilling. JERUSALEM ARTICHOKEs, keep clear of weeds. KIDNEY-BEANS, dwarfs and runners, sow for late and last crops, and should the ground be very wet at the time of sowing, give a thorough soaking of water, which will cause them to vegetate quickly; attend to sticking and earth-stirring among advancing crops. LEEKS, thin out and transplant. LETTUCES, sow often, and thin out early; they should be sown where they are to remain, to mature their growth; place strong sticks to those intended for seed to tie them to, and tie in a few weekly for use according to the consumption. MELONS, lose no time in planting out for late and last crops; look daily to those setting their fruit; attend to this setting and stopping about eleven o'clock in the forenoon, and to top-dressing or earthing-up, &c., about three in the afternoon of a fine calm day, after which sprinkle with water, and shut up early; give an abundance of air to those ripening off their fruit, and be sparing of water among them. MINT, keep clear of weeds. SWEET or KNOTTED MAJORAM, plant out in rich warm borders. ONIONS, pay particular attention to early thinning-out, and surface earth-stirring, or fill up any vacant spaces, by transplanting. PARSLEY, sow or thin out, and transplant. HAMBURGH PARSLEY, thin out. PARSNIPS, finally thin out eight to ten inches apart, and use the hoe freely among them. PEAS, any of the tall *Knight's Marrow* kinds may be sown the first of this month, the earth being thoroughly soaked with water, should the weather be dry; but towards the end sow any of the dwarfier early kinds, such as *Early Warwick*, &c.; attend to hoeing and sticking advancing crops. POTATOES, attend to earth-stirring or earthing-up without injury to the young fibre. RADISHES, sow often in cool situations, in rich soil. SAVOYS, prick and plant out finally. SPINACH, sow in succession, and thin out. SEA-KALE, attend to surface-stirring and thinning-out old crowns, if not already done; seedlings thin out; cut away any flower-stems unless seed is required. SCORZONERA, SALSAFY, and SKIRRETS, thin out from four to six inches apart; use the hoe freely to encourage growth. TURNIPS, sow and thin out young crops. VEGETABLE MARROWS, lose no time in planting out. THYME, plant out seedlings, b. Use the hoe freely in dry weather; attend to all kinds of *pricking* or *planting-out* in rainy weather, or during evenings, as very much may be done in this way at that time of the day during very dry and hot weather; for pricking-out, let the beds or borders be dug up, made neat, and lined out, and thoroughly well watered an hour or two before hand, and again after planting. T. WEAVER.

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WEEKLY CALENDAR.

M D	W D	JUNE 2-8, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
2	Th	Small Heath; commons.	29.866—29.791	53—51	N.E.	03	50 a. 3	6 a. 8	2 23	25	2 22	153
3	F	Meadow Brown; meadows.	29.838—29.709	53—51	N.E.	25	49	7	2 39	26	2 12	154
4	S		29.901—29.716	70—43	S.W.	02	48	8	2 55	27	2 2	155
5	SUN	2 SUNDAY AFTER TRINITY. Boniface.	29.970—29.873	69—54	S.	03	47	9	3 14	28	1 52	156
6	M	Spotted Elephant; s. coast.	29.839—29.678	71—52	S.W.	03	47	10	sets.	☾	1 41	157
7	Tu	Tawny Swift; woods.	29.579—29.539	62—51	S.E.	41	46	11	9 a 2	1	1 30	158
8	W	Fox; woods.	29.617—29.580	69—51	S.W.	45	46	12	9 58	2	1 19	159

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 70° and 47° respectively. The greatest heat, 90°, occurred on the 7th in 1846; and the lowest cold, 35°, on the 8th in 1838. During the period 106 days were fine, and on 76 rain fell.

GOLDEN-FLOWERED SANDERSONIA.
(*Sandersonia aurantiaca*.)



The genus has just been named by Sir W. J. Hooker, in compliment to John Sanderson, Esq., the honorary secretary of the Horticultural Society of Natal in South Africa. It is described and portrayed in the *Botanical Magazine* for May. It was discovered by Mr. Sanderson, flowering in the November of 1851, on "Field's Hill, near D'Urban, and on the Swartkop Hill, near Pietermaritzburg, Natal;" was by him transmitted to the Natal Garden, the curator of which, Mr. M'Ken, sent it to the Kew Garden, where the tubers are now in a state of growth; but the plate and descriptive characters have been made from "faithful drawings," made by Mr. Sanderson, and from the dried specimens he sent to Kew; hence the only difficulty of determining the true position of the congeners.

The tubers are two-lobed, and somewhat half-moon-shaped; stem erect, and about fifteen inches high, about as thick as a Crow's-quill, simple, cylindrical, herbaceous, leafy at the bottom; leaves stalkless, scarcely sheathing the stem but clasping it, spear-head-shaped, not decidedly two-ranked, but upper arranged on one side only, streaked with parallel veins; flowers drooping from between the stem, and upper leaves, single, stalks very slender, orange-coloured, globular bell-shaped, six-furrowed; mouth, six-toothed, with six nectarious hollows forming six bent-in spurs.—B. J.

Propagation and cultivation.—Before giving the proper management of this novelty, I shall add a mite to the biographer's account of it. This identical plant was in my hands seven years since, being part of the consignment, which I lately mentioned, as having been sent home in the "Winchester," in 1846; and, knowing it to be a perfect novelty, I sent it, along with some other bulbs, to Dr. Herbert; and his account of it ran thus—"I am baffled with the three roots from stony places in the interior of Natal. I cannot yet even say to which section to refer it." I am not surprised, therefore, at seeing Sir W. Hooker's account of it, when he says, "I must leave others to decide whether this plant should be placed among the Liliaceæ, or Smilacæ, or whether the two families are really distinct." After this, all that a gardener can say, is, that those who can see no family differences between the Tulip and the common *Smilax*, or the still more common *Asparagus*, have here another instance to confirm their views.

As to the ways of increasing this plant, let us hope that it will multiply its tubers after the manner of an *Alstromeria*, and that it may seed under cultivation, when we can have it more abundantly. As to its degree of hardihood, we are not without sufficient proof—judging from the locality where it was found growing—that it is a hardy frame plant, and, very likely, as hardy as the *Gladiolus psittacinus*. It is a native of dry, stony, hill sides, and, therefore, like almost all South African plants, will require as much fresh air as an *Ixia* or *Gladiolus*; and no doubt but a light sandy soil, with a little heat and free drainage, will suit it best in a pot. There is no reason, that we can see, why it would not do better in an outside border, in the free soil, without a pot, only that it is yet too scarce and valuable to be made a subject for rash experiments. It was in bloom in November, when Mr. Sanderson discovered it, in 1851; but what may be its proper times for growth, and flowering, and rest, remains to be proved with us; and for all this it is now in very safe hands.

D. BEATON.

This is a great novelty—an extremely curious plant, botanically considered, and an interesting addition to our list of half-hardy bulbs; although it is not in reality a true bulb, but a tuberous-rooted plant. It belongs to the natural order Lilyworts, but its true position in the order is not yet sufficiently defined. It would seem to unite in itself the two extremes of the order, having the *Fritillaria* from among the true Lilies, and much of the structural form of the *Convallaria* at the other end of the order. All such come into the *Hexandria monogynia* of Linnæus.

In a previous paper (page 117) doubts were expressed as to how far the accidental deviations from one original type, caused by continuous breeding in-and-in, would be sufficient to account for the present multiplicity of permanent forms and characters among the inmates of our poultry-yards. But many will here say, that, even admitting this among *feræ naturæ*, these forms might still be fixed, and rendered permanent, by domestication, and the effects of their abode in a climate essentially at variance with the conditions of their native country.

In some cases, indeed, acclimatization has certainly wrought stronger metamorphoses; for, if we admit that dogs, as has been said of fowls, owe their descent in all their present families to one common ancestor, these changes cannot be disputed when we see the dog of Guinea almost destitute of hair, while that of the Esquimaux is protected by a double casing of both hair and wool. But it sometimes happens that results that have been confidently relied on as evidence in favour of the wide range permitted to the produce of the animal kingdom, may prove, on examination, to give their weight to the other side of the question. The instances of the dog, just alluded to, certainly prove the elasticity with which Infinite Wisdom has endued all its works, so that life may be prolonged to the utmost possible extent; thus, also, the Ermine and Alpine Hare, among quadrupeds, and the Ptarmigan, among birds, change their coloured summer garb, on the approach of winter, for coverings white as the snow around them, and thus only are they enabled to escape their numerous enemies. These are, however, but temporary adaptations for certain temporary objects, and there is no permanent change whatever in the animal itself. The Esquimaux Dog would have had but a short career in a tropical climate, while the coatless inhabitant of that latter country would have perished within a few hours of his exposure to the ordinary climate of the Polar regions. The same changes are seen to occur with sheep, cattle, swine, and horses, there being in all these great powers of adaptation to various degrees of temperature, and other circumstances of their existence. But with gallinaceous birds the case is totally different; for the *Silk Fowls* in our own yard, great-grandchildren of birds imported from Calcutta, have not varied in the character of a single feather from their original plumage, designed, doubtless, for the intense heat of an Indian climate; while, on the other hand, the English Game fowl, whose feathers, when in high condition, are, as it were, glued together, retains this characteristic as fully and as perfectly on the banks of the Ganges, as on those of the Thames.

Fowls, therefore, we infer, are certainly not subject, in the same degree, to those powerful influences, which, in other members of the animal kingdom, effect such extraordinary changes in external appearance; hitherto, at least, we have been unable to detect any instance that would authorise us to believe the contrary. Mere domestication, again, *i. e.*, a state of subservience to the wants of man, however it may affect the disposition, does not appear to influence the form.

Up to this point, separately, we have regarded the causes by which many are led to uphold the idea, that to look for more than a single origin for all the different families of the poultry-yard was an unnecessary task. But, granting that neither the fortuitous produce of fowls in a wild state, nor their domestication, when they had once submitted to the caprice of man, would afford probability for the primitive unity of their stock,—might not this be possible, it may be asked, from their combined operation? The examples quoted as corroborative of this view of the case, commonly refer to the improved breeds of cattle and swine—we except sheep, because, although all our present varieties of the former may possibly be correctly assigned to the same progenitor, with sheep there exist doubts on this head, and it is not unlikely that they, too, as we are disposed to think of fowls, may have had a plurality of original parents.

But with respect to cattle and swine, we would ask—Are the distinguishing features of excellence, presented to us at our agricultural exhibitions, of a fixed and permanent character? Have we only to obtain a boar and sow of Mr. Fisher Hobbs' improved Essex pigs, or a bull and a cow of first-class Shorthorns, to be enabled to fill our homesteads with stock, that, generation after generation, will repeat their parents' merits? The youngest farmer knows full well that such a course would end in bitter disappointment, and that, without the constant infusion of fresh blood from approved races, rapid degeneracy invariably ensues. In a literal sense, therefore, we have no more thus established any new breed than we possess the powers of creation—a phrase, be it remembered, which certain French writers have not scrupled to apply to the result of scientific breeding. We have improved, and the advance has been prodigious; but cease our labours, and the relapse will be equally astonishing.

In what we have now said, we are not forgetful that this observation may be made. In fowls, too, the introduction of fresh blood seems necessary—at any rate, the pages of "The Poultry Book" strongly enforce the importance of obtaining it whenever practicable. Undoubtedly they do insist on this as an essential point in poultry management; and to maintain excellence in our yards for a continuous period it must, we apprehend, be had recourse to; but still, if we neglect this precaution, our poultry may not, it is true, produce such fine specimens, for they will probably lose weight, or show foul feathering, but the main distinctive features of the different families will remain in as marked a form as when we first had them—the Game fowl will still be a true Game fowl, for it does not pass to any other form, and so on throughout the list. A farmer in Yorkshire, for instance, has kept Golden Polands for forty years, and Golden Polands they still are, and, moreover, not bad birds of their class, even for these days of improvement; and yet crosses, it seems, have never been admitted. But we are inclined to believe that such apparently specific points of difference between present varieties of cattle would be lost within a

much shorter period. Less permanency, therefore, of their several features and properties induces us to expect less original distinction than seems probable with reference to the domestic fowl.

We have argued on the supposition that all our horned cattle owe their descent to the same parents, but the present features of the Bison, the Buffalo, the Indian Brahmin cattle, the wild race of Lord Tankerville's park, the Musk Ox, and last, not least, the Aurochs of the Lithuanian forests, give weight to views of an opposite nature.

In conclusion, let us observe, that the mutations of form and covering that may be recognised in many members of the same species that are found in localities of opposite temperatures, and under different conditions of existence, seem to be limited to such merely external points as are essential to existence in their altered state. There appears, so far as we are aware, no change in their structure, or anatomical formation. Fowls, it has been shown, do not manifest this peculiarity; and, whether brought from India to England, or sent from the latter to the former country, these external characteristics remain unaltered. We find a different rule, therefore, in these several cases, and thence conclude that, however powerful may have been these influences in the one case, they are inadequate to produce the results that are before us as regards the case of our domestic fowls.

Again, we notice a strong case of structural variety. The skull of the Poland, for instance, is round as a marble, while that of other fowls deviates but little from a straight line.

There are some other points, to mention which would unduly extend the limits of these notes, that, in addition to what we have now alluded to, prevent our adoption of the prevalent opinion, that the natural deviations of progeny from parents, even when aided by the important results of domestication, and acclimatization, are sufficient to account for the multiplicity of present permanent forms, characteristics, and properties, visible amongst our domestic fowls.

Similar views are entertained, it may be mentioned, with respect to the common Blue Rock Pigeon (*Columba livia*). To this bird the honors of paternity over the whole family of Carriers, Pouters, Fantails, Runts, Tumblers, and all the other inhabitants of the pigeon-house, have been unhesitatingly assigned in the same summary manner. Domestication, we are told, has been amply sufficient for all these striking contrasts in form, colour, size, and properties, now so fixed and permanent. The gradual progression towards the present state, however, is not explained; and when we see the Blue Rock, not merely on its native cliffs, but in our old manorial dovecots, where for centuries they have had their abode, still unaltered, and in both states presenting the same identical features, we may still be permitted to doubt whether this derivation is more accurate than the similar process in reference to the tenants of our poultry-yards.

W. W. WINGFIELD.

Various modes have been described of forming durable roads and walks with gas coal-tar, so that now its cheapness, from one penny to twopence a gallon, at the manufactory, offers great facilities to those near a gas work for obtaining hard and dry thoroughfares.

In the case of roads, it may be preferable to mix the tar and the stones, &c., before spreading; but so far as our limited practice goes, there is little necessity for mixing the materials in the case of walks not subjected to the tear and wear of horses feet.

Gas tar is useful for other purposes, however, so we will glance at a few purposes for which it may be used in the garden.

In *making walks* that are not to be very much used, the first thing to be attended to is forming the bottom of the walk of the proper shape, and getting it hard and smooth. On this, during a dry day, spread a layer of tar, from one-eighth to one quarter-of-an-inch in thickness, and, as you proceed, throw on clear gravel, small, but freed from the dusty particles; roll this in, and then give a surface-dressing of the finer, so as to cover the blackness of the tar. A little experience will soon enable any one to get into the knack of just putting on as much as the tar will penetrate, and yet leave the surface of the natural colour. If near a gas work, we know of no plan cheaper and easier for making a good walk, as the wet cannot enter it from above, and the frost will seldom or never affect it.

For *keeping rain out of the soil*, the ground being levelled smooth, we find the thinnest covering sufficient; less than the thickness of sixpence; a little drift sand being then thrown over it.

For making a *standing place for plants in pots*, so that worms shall not visit the roots, we proceed just the same as we would in preparing a walk that would have little stress upon it. We lately covered a court, some seventy feet by forty, that was always very troublesome to keep clean, both in summer and winter. It never had more than an apology for being gravelled, as a good-sized weed, when pulled up, brought plenty of clay and loam along with it. A stone path went through it, and, therefore, to do anything in the shape of gravelling, the clay must be excavated. This was rather too troublesome a job; therefore, nothing being in the way, tarring was resolved upon. First, the ground was levelled and swept clean, leaving a firm, hard bottom; a cart brought a couple of barrels of tar; as near as we could calculate, sixty-five gallons were used; the day being hot, it ran from the barrel just as if it had been oil, was carried in a little tub, poured on the ground, and spread with a bricklayer's trowel. If you multiply seventy by forty, you may judge with what thickness. As the work proceeded, four loads of fine siftings from rough gravel was thrown on it, levelled neatly, and when dry on the surface rolled. In a few places the tar shone through, and on these a little more siftings was spread, the whole piece swept gently on the surface, and rolled again, and we are sure, if it gets fair play, it will want nothing more for a twelvemonth, and most likely not for a number of years, while in dry weather, and

wet weather, it will always be clean, and nice, and dry. I must mention, that there is an open drain at the lowest corner, to take away the water that falls on the surface, for little will find its way through it.

This should be kept in view in making such a place for standing plants in pots upon, otherwise you may make a large saucer for them. A very thin layer of tar will effectually prevent the worm even trying the bottoms of your pots, and a slight sprinkling of siftings of gravel, or road drift, will keep the surface clean and cheerful. Of course, roots will not run through the pots into the ground: when they approach the tar they will turn back again, or spread themselves on the surface.

A mixture of coal and Archangel tar, or that obtained from the consumption of the Pine family, put on hot, is largely used for *painting iron fencing* at Trentham, and looks well. We have never seen such fencing painted with oil paint that looks well above three years; but what a difference in expense, and, after all, it is not such a good preventive of the iron oxidising, or rusting, as tarring.

We have not employed coal tar in *making manure tanks*, but a most intelligent mechanic has one made in his garden for receiving and containing water for garden purposes. The hole was dug sloping—say six feet square at top, and three at bottom, or any other convenient size. This sloping of the sides is a security against the earth falling in, and any dimension as to width might be adopted. He then mixed coal tar with lime and road drift, and plastered all over the hole from half-an-inch to one inch in thickness, and it has answered the purpose as well as a brick and cemented tank. Very little of the tar is given off into the water, and after being used a short time it is hardly perceptible.

The *drawbacks to the use* of coal tar are twofold. The strong smell, which, less or more, lasts from a month to six weeks, and which cannot be dissipated by anything we are aware of; and the disagreeableness of the work. The clothes of the workmen must be well guarded, as every spot, independent of other considerations, will retain the smell for weeks. It is also advisable to roll up the shirt-sleeves, and gloves may be used for the hands, but, however smeared they are, grease, and soap, and warm water will quickly cleanse them.

Our attention was directed to tar, many years ago, in the following manner. We were excessively annoyed by *rats* getting into drains: they *would* make holes by the side of the gratings. A space round the gratings was laid down with tar and gravel, and no rat ever touched them afterwards. Finding they so disliked it, when we got one in a trap we tarred him, and sent him off; and though that happened a number of years ago, we have not seen one in the garden since, though previously they managed to get more than their share of everything eatable. A few days before the tarring process we found five dozen of half-grown peaches under a stone pathway, which must have been carried

there by the rats. Was this for mere mischief's sake? They certainly could not eat them. R.

It has been communicated to us that some misapprehension has arisen relative to Mr. Beaton's observation, at page 20 of the present volume, "that the most systematic frauds are going on, from one year's end to another, by means of advertising alone." Now, that this is most true admits of no doubt, and our contemporary, the *Gardener's Chronicle*, has done good service in exposing some of these fraudulent advertisers. It seems absurd to say, in reply to one query that has reached us, that we made no allusion to any advertisers in our own columns, because we can assure our readers that, were we aware of any such characters, their advertisements should have no place here. Indeed, such a scrupulous supervision is maintained by the gentleman under whom our advertising department is placed, that we believe not one objectionable advertisement has ever appeared in our pages.

A SALE of *Orchids*, more than usually interesting, took place at Mr. Stevens's Auction Rooms on the 19th and 20th of May. The following quotations from the Catalogue are given, because proceeding from trustworthy sources, such as Mr. Skinner, Dr. Lindley, and Mr. Warszewicz.

"This fine collection of Orchids was made by Mr. Warszewicz, on the Eastern Cordillera of the Andes, principally on the hitherto unexplored banks of the Marañon River, near its source, and in the territory of the savage Xivaro Indians; the melancholy results attending all former attempts to penetrate into this country by European Naturalists, sufficiently show what must have been the perils Mr. Warszewicz underwent, and not until he was menaced with the knife of the savage did he desist, and was compelled to make a hasty retreat, however carrying with him a fine collection, which still had to suffer in their transport across the Andes to the port of embarkation; and some idea of this may be gathered from the fact of the collection being made previous to the 15th of November, and their embarkation not taking place till the 12th of February. Mr. Skinner, anxious to do justice to this collection, has given them a trial of two months in England, and although the deaths have been great, particularly amongst those of the most delicate habit, yet, what are now offered are perfectly safe and in good growing condition. Among such a quantity of dead and rotten masses, the leaden tickets got much oxydized and often perfectly indistinguishable, consequently, among the Oncids and Odontoglossos, no certain determination can be given, but their remarkable habit show sufficiently that *all* (or with a few exceptions) are either undescribed or quite new to our gardens in Europe. No temptation (Mr. Warszewicz writes to Mr. Skinner) would induce him to repeat such a journey, and it is little likely an opportunity will occur to receive again similar plants. Moreover, Mr. Warszewicz may be very soon expected in Europe, as he has just been appointed Inspector of the Botanic Garden at Cracow by the Emperor of Austria.

"Lot 1. *Epidendrum Frederici-Gulielmi* (Warez.), a most magnificent new species, with large blood-red flowers, certainly one of the finest of the genus; was found in rather damp soil, one fine healthy plant. Sold for £16 16s.

"Lot 16. *Epidendrum porphyreum* (Lindley), a fine crimson flowered species, growing about 1½ ft. to 2 ft. high, one fine mass. £5.

"Lot 17. *Maxillaria conica* (Lindley), a new species, with large ivory white flowers, one fine plant. £3 7s. 6d.

"Lot 22. *Anachaste sanguinea* (Lindley), a new genus, apparently related to *Cochlidia*, with rich blood-red flowers, like that of a *Comparettia falcata* in size—one fine plant. £4.

"Lot 26. *Epidendrum giganteum* (Lindley), a magnificent new species, with enormous panicles of crimson flowers, forming, in its native habitat, masses of a foot-and-a-half in diameter, one splendid specimen. £8.

"Lot 32. *Catasetum secundum* (Lindley), a new species, with curious violet-coloured flowers, all turned towards one side of a drooping raceme, one fine plant, coming into flower. £2 2s.

"Lot 34. *Brassia villosa* (Lindley), a new species, near *B. cinnamomea*, bears two to three flower stems, and richly scented, one fine plant. £2 17s. 6d.

"Lot 37. *Peristeria fuscata* (Lindley), a fine new species, with flowers as large as *P. cerina*, of a pale cinnamon, spotted with brown in the inside, dull pink on the outside, in pendulous racemes, from twelve to twenty flowers in a raceme, richly perfumed, magnificent mass. £2 15s.

"Lot 49. *Eriopsis altissima* (Lindley), a new species, with the middle lobe of the lip oblong, entire, white, spotted with dark green, one good plant. £2 6s.

"Lot 52. *Gongora cymbiformis* (Lindley), a beautiful new species, with cinnamon coloured flowers, spotted with brown, very distinct. Mr. W. says this plant generally has from four to five flower stems from each bulb, of two to three feet long; he counted as many as 140 flowers, and a delicious perfume was distinguishable 500 feet off, one very fine plant. £2 10s.

"Lot 108. *Maxillaria cinnabarina* (Lindley), a new species, with pale yellowish-green flowers, and a rich apricot-coloured lip; the number being off this plant, it is supposed to be this *Maxillaria*, from the resemblance of the plant to the drawing, being the nearest corresponding to it, one fine plant. £4."

There were, altogether, 176 lots, and these were followed by 124 lots of Guatemala Orchids, which sold at prices varying from £1 to £7 15s., this highest sum being given for a very fine plant of *Barkeria spectabilis*.

It is proved, by every year's experience, that a collection of anything that can be systematically arranged, or that may illustrate any branch of either science or literature, is certain to attain a value far above the intrinsic value of the things so collected. One example is within our memory, of a lady who collected impressions of the seals of the nobles and gentry of the British dominions, arranging them in counties. She obtained some thousands of the impressions, and her collection sold for more than one hundred pounds. Another collection, but of *Birds Eggs*, has just been sold at auction, by Mr. Stevens, and is another illustration of the value that may be thus created. This collection was formed by T. H. Potts, Esq., of Kingswood Lodge, Croydon, and amounted, we should think, to about seven hundred eggs. The price these fetched was nearly £120. Our readers have been astonished that those *egg-layers*, the Shanghai fowls, have realised as much as £42 for one bird; but this is as nothing, as compared to two results at this sale, for two *egg-shells* were sold, the one for £30, and the other £29! These gold producing egg-shells were the produce of the *Great Auk*, better known as the Penguin (*Alca impennis*). As a British bird, it is of extreme rarity; "not more than ten individuals having occurred in our seas. One was seen off Fair Isle, in June 1798, and a pair, bred in Papa Westra, for several years. Various authors state that the egg is

about five inches long, and nearly three in breadth; pear-shaped, like that of the common Guillemot; yellowish white, with numerous irregular lines and blotches of brownish black." (*Macgillivray's British Birds*, v. 361.)

WE are informed by Mr. Kirkconel, bookseller, Workington, that a Shanghai pullet in that neighbourhood laid a double-yolked egg, which has given birth to two chickens. Writing to us on the 20th of May, he says:—"They are yet healthy and live-like. From present appearances I fancy them to be a male and female; one being larger and of a darker shade than the other." We never heard before of two chicks *living* when produced from one egg; and if they attain to cock and hen-hood, we should like to know if the hen proves fertile.

GLEANINGS.

CHEMISTRY OF AGRICULTURE.—Many of our readers will remember the ridicule with which the late Earl of Dundonald was assailed for the opinions he entertained, and which he so ably maintained in his pamphlet, "On the connection of Chemistry with Agriculture." It is true that he was sustained by such authorities as Lavoisier, Kirwan, and Henry, who pointed out, that "a perfect state of the cultivation of the soil would require a minute acquaintance with the nature and effects of the great variety of the external agents, that contribute to the nourishment of plants, or influence their state of health," but then, Peter Pindar raised roars of laughter by ridicule such as that in which he argued, that if chemistry could achieve such wonders,

"Soon, very soon, may'st thou proclaim aloud,
(Rare news for farmers) traps to catch a cloud—
Quick on his prisoner Hob will lay his hands,
And tap its watery belly for the lands."

Yet, if such contemners of science had lived until now they would have had to confess their own short-sightedness. They might have eluded such a confession, if Societies only and Colleges had retained the services of Professors of Agricultural Chemistry, for they would have argued that such Visionaries were well associated, but they could not have thus wriggled from such a fact as this:—

"A society has been formed at Tamworth, comprising some of the most influential landed proprietors and leading agriculturists of the neighbourhood, for the purpose of engaging the services of an analytical chemist, who will be required to analyse manures, food for stock, and other produce grown upon the land, give lectures to the members, and render such other professional assistance as may be deemed advisable, with a view to a more regular and scientific application of the principles of chemistry to the cultivation of the soil."

SALE OF FAT CATTLE AT THE MARQUIS OF LONDONDERRY'S FARM.—We learn, from the *Durham Advertiser*, that on Monday, May 2, this sale took place at the Pensher Colliery Farm, in the county of Durham. Mr. W. Wetherell, the celebrated stock salesman, acted on

the occasion, and seldom in the course of his great experience has he submitted for public competition a number of cattle in primer condition for the butcher. They consisted of 106 head—and comprised sixty-six short horn heifers, eight short horn steers, thirty-one polled Galway heifers, and a short horn bull; besides which were eighty half-bred hogs. Previous to the sale the cattle were viewed by the company, and the utmost satisfaction expressed at the fine lot of animals which had thus been brought together. By the liberal manner in which such noblemen, as the Marquis of Londonderry, place within the reach of their agents the means of rearing and exhibiting such stock, a desire for improvement is stimulated amongst tenant farmers and others interested in the breeding and feeding of cattle. The company assembled on Monday was not, perhaps, so numerous as has been witnessed on former occasions of a like nature in this neighbourhood, but such as were present had evidently come with the intention of doing business, for the lots were all quickly disposed of "at good market prices." Previous to the sale about 200 persons sat down to luncheon, which had been spread in the large granary. Mr. Wetherell occupied the chair, and after the repast, led the way to the sale ring, and having mounted the rostrum—after the usual "conditions" had been read,—the first lot, a splendid short horn heifer, was introduced, and quickly knocked down for £22. The sale of the remaining sixty-five heifers and steers was then proceeded with; buyers were brisk, and the whole were speedily disposed of at prices varying from £24 10s., down to £15 15s. The Galloways brought from £12 to £17 10s., and the short horn bull realised £30 5s. After the cattle had been disposed of, the sheep were sold at prices varying from 32s. to 35s. per head. The cattle realised £1,885, and the sheep £138—making a total of £2023.

MR. LAWSON'S LECTURES ON BOTANY.—On Monday evening, the 2nd of May, Mr. Lawson, of the Botanical Society, opened his summer course of weekly Lectures on Botany, in the Hall, 8, Infirmary-street, Edinburgh. There was a large attendance on the occasion. The lecturer stated that before proceeding to the regular business of the course, he meant to point out, in his introductory lecture, some of the objects of botanical science, and to give a rapid sketch of the general features of vegetation in different lands, dwelling more particularly on the characteristics of the British Flora, and its relations to the vegetation of other countries. He accordingly called attention to the remarkable differences of structure presented by members of the vegetable kingdom, noticing particularly those of importance in guiding the researches of the geographical botanist, from the minute snow-plant of the Arctic Regions to the luxuriant palm-trees of the Torrid Zone. He also illustrated the subject by a reference to those plants upon which man depends for his support and enjoyment in different parts of the world. He gave a detail of the features which characterise the

vegetation of northern Europe, and then entered upon the subject of the British Flora. After alluding in a historical manner to the principal authors who had contributed to the knowledge of British botany, he stated that attention has only been recently directed to the subject of the geographical distribution of plants in Britain, a department in which Mr. Hewett Watson has been almost the only labourer. Mr. Lawson then detailed the views brought forward by Professor Edward Forbes, Martins, and others, to account for the present distribution of plants in the British Isles. This led to a consideration of the subject of the origin of plants and their diffusion over the earth, in connection with which many interesting facts were brought forward. The lecture was illustrated by a rich display of drawings and diagrams, as well as by living and dried plants, and preparations under the microscope. It is intended to have frequent botanical excursions in connection with the class.

CHEESE.—The quantity of *Cheese* imported into England during the year ending the 5th of January, 1853, amounted 289,457 cwt.; namely—from European States, 278,179 cwt.; from the United States, 11,275 cwt.; and from the British Colonies 2 cwt.

EFFECTS OF THE LATE WINTER ON CONIFERÆ.—The following notes show the effect which the late severe winter has had in Messrs. P. Lawson and Sons' Nursery, at Edinburgh. In the Pinetum there were no coverings of any sort given to the plants, in order to test how far they might be calculated to stand our climate, and these results now appear:—

1st.—CUPRESSINÆ: *Juniperus* *drupacea*, *macrocarpa*, *rufescens*, *recurva*, *squamata*, *chinensis* (male and female), *excelsa*, *tetragona*, *dolabrata*, *sphærica*, are not the least injured; but *Bermudiana*, *flaccida*, *mexicana*, and *sophora*, are all killed. *Widdringtonia juniperoides*, *cupressoides* much injured but not killed. *Libocedrus Doniana*, one plant much injured; but another, shaded from the sun's rays by a bush, quite fresh. *L. tetragona* and *chilensis* both quite fresh. *Biota pendula*, *Thuopsis dolabrata*, *Cupressus funebris*, *Retinispora squamosa* and *ericoides*, *Taxodium heterophyllum* and *ascendens*, *Cryptomeria japonica*, *Cupressus macrocarpa*, sp. from Mexico, sp. from Simlah, all quite healthy and fresh. *Cupressus glauca*, injured but not killed. *Cupressus Goveniana*, *Lindleyi*, and *thunifera*, completely killed down to the roots.

2nd.—ABIETINÆ: *Pinus* *Brunoniana*, *nobilis*, *religiosa*, *Nordmani*, *cephalonica*, *amabilis*, *grandis*, *Pindrow*, *Webbiana*, *Pinsapo*, *Menziesi*, *orientalis*, *obovata*, *Kutrow*, *ajomensis*, *Tschugatsgoi*, are all fresh and healthy. *P. Brunoniana* evidently gets hardier as it grows older. Plants one and two years old we have several times had killed; those now reported on are four years old. *Pinus Douglassi*, from home-saved seed, are some of them killed, others much injured, while others raised from imported seeds growing in the same place are fresh; the foliage of the latter is of a deeper green, broader, and with more substance. *Pinus Jezeensis*, in a moist situation, is killed; but similar plants in a dry position are only partially injured; the plants are only two years old, and it is very probable that, like *P. Brunoniana*, they may get hardy as they grow older. All the species of *Larix* and *Cedrus* have escaped uninjured; the newest one, *Larix Griffithi* (Hooker), seems quite hardy. *Pinus excelsa*, *monticola*, *Ayacahuite*, *Lam-*

bertiana, parviflora, rudis, Hartwegi, Russelliana, macrophylla, Montezumæ, occidentalis, Sinensis, Sabiniana, Gerardiana, Coulteri, muricata, radiata, tuberculata, insignis, Benthiana, ponderosa, Bungeana, contorta, Massoniana, Cembroides, Fremontiana, osteosperma—all quite fresh and uninjured. *Pinus oocarpa*, *apulcensis*, *tenuifolia*, *leiophylla*, *filifolia*, *patula*, *australis*—either completely killed, or so much injured that there is little hopes of their doing any good. *Cunninghamia sinensis*, in the open borders, killed; plants against an east wall quite fresh. *Sequoia sempervirens*, *gigantea*—both considerably injured in last year's growth, the foliage much browned and scorched; but the plants are all giving indication of growth, and likely in a few weeks to be quite green.

3rd.—*PODOCARPEÆ*: *Podocarpus pungens*, killed; and several other large-leaved species of this tribe. *Podocarpus Kordiana*, quite hardy in the open border. *Dacrydium cupressinum*, and *Franklini*—both growing against a south wall.

4th.—*TAXINEÆ*: *Phyllocladus trichomanoides*—quite fresh against a south wall. *Cephalotaxus drupacea*, *tardiva*, *Fortuni*, *Torreya nucifera*—have all stood well, and are likely to prove fine hardy trees. *Ephedra vulgaris*, *altissima*, *macrostachya*—are all fresh.

In the general collection of trees and shrubs, all the new *Rhododendrons* sent from Sikkim by Dr. Hooker were left unprotected, and they appear none the worse, *R. Dalhousiæ* and *R. argenteum* excepted. *Berberis Darwini*, *B. Fortuni*, and *B. nepalensis* have stood well, though the plants are rather small; the two new varieties of *Tree Box*, brought from China by Mr. Fortune, seem quite as hardy as the other sorts; *Cerasus allicifolia* is considerably hurt in the open border, but a plant on an east wall is not. *Ceanothus papillosus* and *C. dentatus* are slightly damaged in the open ground and on a wall, but *C. rigidus* is not the least injured; this seems the best of the three. All the species and varieties of *Arbutus* have suffered slightly, except *A. tomentosa*; this seems quite hardy, and highly deserving of more extensive cultivation. All the species of *Escallonia* are killed in the tops, both on the borders and walls; the new *E. macrantha* does not seem any harder than the older sorts; *Fabiana imbricata* is fresh in the open ground, and beginning to show flowers; *Garrya elliptica* and *G. macrophylla* are not injured this year, though last year they were both injured by less cold, but it was in April. *Fagus betuloides* and *F. Cunninghamii* are both very fresh and green on a south wall; the beautiful *Hedera Rœgnieriana* is also quite green. *Quercus glabra*, *Q. glaberrima*, *Q. annulata*, *Q. virens* are all killed; but the new *Q. agrifolia* is healthy and fresh, so is *Q. Mirbelii*, which promises to be a fine sub-evergreen tree; and *Q. Mexicana* is fresh on an east wall. *Eleagnus reflexa* on a west wall also looks fresh, and promises to be quite hardy. Considering the intensity of the frost, and the dry bright sunshine which accompanied it during many days, the injury to plants, though considerable, is not great; a much less extent of frost in the end of April or the beginning of May will do far more damage, as the plants have begun to grow, and the young shoots are succulent.—*From a Paper read before the Edinburgh Botanical Society.*

LIQUORICE CULTURE.—A few weeks ago we made some remarks, in answer to a correspondent, on the cultivation of Liquorice. Since then we have met with an interesting account of the method of cultivating it, and the profit arising therefrom, which was communicated to the celebrated *Stephen Switzer*, by a planter at Pontefraet, in the year 1730. As this will, no doubt, interest many of our readers, we publish it in full.

“Pomfret, July 24, 1730.

“MR. SWITZER,—I received yours of the 12th instant; and as soon as ever I could draw it up, have sent you the best account I can of the methods used by our liquorice planters in the raising, curing, and vending their ware, as also an account of the charges which are naturally contingent thereto, as well as of the profits which they make

by it. I send it you only in a rough manner, so pray give it what model you think most suitable to your purpose.

“Planters of liquorice divide the roots into two several denominations. Those they call the stocks are the tops or crown buds; from thence the liquorice root is cut off. The runners are small running roots, with eyes about two inches distant from each other, and run about two inches below the surface, three or four feet long. These runners (before planting) are cut into lengths, of about five inches long, three eyes to each plant, though two eyes, if they are strong and good, will do.

“If the ground has not been liquorice before, it must be trenched over two feet-and-a-half or three deep; the roots in soft sandy earth will run six feet deep. The ground must be manured or covered over with rotten horse-dung, which must lie a month or more to consume before it is dug in. A little lime is requisite if the ground be strong; but that is done after the dung is dug in; and the lime must be turned in about ten days before planting, or else it will ferment, and heave and thrust the roots out of the ground again.

“Before planting, you are to line out your ground by a rod, of three feet long, for each bed's breadth; and within that space tread a narrow alley the width of a man's double feet, or both his shoes going one by another, moving straight forwards by the line which makes this direction, and which is about a spade's breadth, with which, also, you are to throw up the earth out of those alleys upon the top of the beds, the alleys to be about eight inches deep. Then draw up the sides of the bed with a strong rake, and (as gardeners term it) cog the beds with it, so as to make them round at top, which done, lay the beds in three rows, one row on the middle of the ridge or bed, and the other two on each side, a foot from the middle, and the buds in the rows at six inches apart, first a stock or crown bud, and then three runners betwixt. Then, with a large dibber, made of the upper part of an old spade, eight inches in length, as is used to plant out garden beans, you are to plant out your buds and runners; and, beginning at one end of the ridge or bed, take your bud in your left hand, and the dibber in your right, make the depth of the hole the full length of your dibber; then force the bud with your left hand to the bottom of the hole, and you are to close it by thrusting of the dibber down again sideways pretty near the same hole, as is done for cabbage plants, &c.; and so working towards the left hand, it will go on apace. Those who practice such works much, will do it expeditiously.

“The sides of the beds must be drawn up just after the buds are planted, so as the holes which the dibber left may be filled up; in order to cover the roots and keep out the wet.

“The first year after liquorice is planted, you may sow a few onions and carrots upon the beds, not to stand, but to draw whilst young, and those but very thin; and as far as you can reach with your hand you may sow a few radishes and lettuces. In the autumn, you may also sow spinage, which grows very fine for the spring following, and which may be cut before the liquorice grows much, especially on the ridge. The profits which arise from hence may, in this one year, be well computed at £12 10s. an acre, which we shall make appear by-and-by, when we come to state the debtor and creditor of this commodity.

“Liquorice at Pomfret, and other places, is never in perfection till it has stood three years; and many there be that let it stand four, if it look healthy and lively. For propagation, the runners for sets are sold by the stone, at the same price as liquorice itself is at the time; but the stock or crown buds carry nearly double the price. The lops are annual, growing the first year about a foot high; the second year two feet; the third year four feet; and those lops are always cut off in frosty weather, which keeps the roots from tearing. The green is best to be cut off with garden shears the first year, because of its not being so strongly rooted as afterwards it will, when it may be mowed with a scythe. The flowers come out in August and September; but it very seldom or never flowers till the plants are three or four years old. They are blue, and hang out in small tresses, like the senna's, but above three inches long. The stocks are like those of raspberries, only smooth, and the leaves like seedling ashes.

"Liquorice is taken out of the ground from Martinmas to the first of April, but the latter season is the best both for the liquorice and the buds. When you take it up, sort the small from the great, from which last you are to dress the chats with a fine knife. Then lay them in sand, one layer of sand and another layer of liquorice; but wet not the sand with any moisture, than just so as you can hold it in your hand without running out no water; but it ought to be rock sand, such as is dug out of the pits about Pomfret, Nottingham, and other places. You are to order the running buds and runners in the same manner, if early taken up, but the crown buds will do if thrown in a heap, and covered with mats, &c.

"The small liquorice is for the most part dried on a malt kiln, after it is chopped short with a hatchet, or some other edged tool, and then ground together in a mill, which is the readiest commodity of all. Or else it is pounded in a trough while it is green, and put into a mashing-tub, and mashed together with cold water, two days together. Then it is to be wrung out clean, and the juice boiled up in an iron pot to a black substance, called *Spanish Liquorice*, and at the place before mentioned, where it is raised, called *Liquorice Cakes*. The cakes they make at Pomfret are round and flat, with a stamp resembling the ancient castle of that town, now in ruin,* within the top of which castle there are two acres of land at this time employed in the propagation of this noble, useful plant. It is further remarkable, that one acre of the ground just mentioned has yielded five hundred stone weight (which is generally sold for three shillings and sixpence per stone) in one crop, which must be accounted a very good advantage, for in three years it amounts to eighty-seven pounds ten shillings, which is little less than thirty pounds per acre one year with another. Nor is the charge of tillage so dear, by a good deal, as hops and several other improvements are.

"Before I finish this account (says this noted correspondent), I cannot but remark, that about seven years ago all the liquorice at Pomfret was monopolised and engrossed by a set of merchants, &c. But the engrossers, by sending too great a quantity together, found, to their cost, that it heated and smoked like a hayrick put up too green; which I mention by way of precaution to those that raise great quantities, who ought not to lay above two hundred stone in a heap; for though this may seem a great quantity, yet a much larger has been taken up, and transported, or kept in one parcel.

"When liquorice is to be transported, all that is designed for present use is tied up in seven or fourteen pound bundles, neatly rolled up and bound with packthread. But the only way to be taken is to send it by water, and then to lay it in dry sand, or any other dry soil, a layer of liquorice and a layer of sand, so that the sand runs all over it and amongst it, and so an apothecary may thus keep it good for twelve months in his cellar. As for transporting of the roots for planting—if the small eye-roots, or runners and buds, were so transported in sand, it were better for them than to be sent naked, especially if it be a great way, and they are like to lie out of the ground long. If for a journey of fourteen days, they may be sent in bundles cut ready for planting; but if they are to be out of the ground longer, then they moulder and rot. They should not be mixed head and tail if you send them any distance, but must be bound up in little bundles as above, and tied all one way, for readiness of planting. As for the crown buds, they may be sent by sea with a little sand to them, being much harder than runners are.

"At the town of Pomfret are about fifty acres of ground, called *Liquorice Garths*, many of them in small apartments, which entitle the possessors to as many votes for members of parliament as they are possessed of those small parcels of land, all which causes the land tillage to be very dear, the common labourers having one shilling per day, and two drinkings, which amounts in all to about fourteen or fifteen-pence per day. But there are many other places where it is found, by experience, that there is as good liquorice raised as at Pomfret, and where men and buds are very easily procured.

* Although this was written a hundred and twenty-three years ago, the manufacture of these cakes, impressed with "the ancient castle," is still continued, or at least was so a few years ago.—H.

"As to the expenses of planting and preserving an acre of liquorice, the price of roots differ in proportion to the price that liquorice bears the year you send for them. When liquorice gives three shillings a stone, fourteen pounds to the stone, then crown buds give five or six shillings per thousand, and runners, cut into lengths, and tied up in bundles, give three or four shillings a thousand.

"Old planters of liquorice reckon that eighty thousand of plants will plant an acre. But computing twenty plants to a yard, and four thousand eight hundred yards to an acre, then an acre requires ninety-six thousand, at one hundred and sixty square poles to an acre, thirty yards to a pole square, and twenty roots to a yard, as may be seen in the example:—

160 poles in one acre
30 yards in a pole
—
4,800
20 roots to a yard
—

96,000 total of roots to an acre.

"Now, as they generally plant one-fourth of stock buds, and three-fourths of runners, then there will be required—

	£	s.	d.
24,000 stock buds, at 5s. per 1000 when cheap ..	6	0	0
72,000 runners, at 3s. per 1000	10	6	0
The charges of preparing the ground will be about	4	0	0
Weeding, the first year, about	4	9	0
Weeding, the second year, for it is not houghed, but weeded with the grub and hand, at	3	0	0
The same operation the third year, at	3	0	0
The taking up and bundling the last year, at	3	0	0
	£33	15	0

"So that, from what goes before, and what will by-and-by follow, it is plain, that an acre of liquorice will (one year with another, as to the debtor and creditor of it) stand as in the underwritten scheme, the whole being taken at an average for three years.

DEBTOR.

Three years' rent of the ground, at £5 per acre ..	15	0	0
The whole charges of planting, weeding, and gathering	33	15	0
To the vicar, for tythe, at 2s. per pound, i.e. 10s. per acre, for three years	1	10	10
In all	£50	5	10

CREDITOR.

Five hundred stone of liquorice, at 3s. 6d. per stone	87	10	0
A crop of onions, &c., the first summer	1	0	0
Some winter's crop for that year	2	10	0
In all*	£91	0	0

DEBTOR AND CREDITOR BALANCED.

Debtor, to rent, &c.	50	5	10
Creditor, to goods sold	91	0	0
	£40	14	2

"To finish this account, it is plain, from what goes before, that fifty shillings an acre is allowed for the first winter's crop; but if the ground be sowed with Michaelmas onions, carrots, lettuce, &c., there seems to be no reason why all the three crops may not be worth half as much, at least, as the one summer's. And perhaps the same methods may be taken in other winters, when the stalks are gone, as used to be done on beds, at least as it used in the alleys of asparagus plantations. And by this it appears, that if a planter was possessed of a hundred acres of liquorice, and had a vent for it, it would bring him in near two thousand pounds a year, clear of all expenses. But an hundred acres is too much for one man, or in one county, so no more of that.

* We have been obliged to deviate from the original statement as regards the credit total, which is, by an error in addition, stated to be £100, in consequence of which the result of "debtor and creditor balanced" will show a considerable deficiency.—H.

"And thus, Sir, have I given you as good an account as I could concerning the raising of liquorice at Pomfret, at least, as good a one as the time you gave me would allow; though I am, I think, pretty sure that there is little or nothing omitted that is material, and absolutely necessary to be known in this affair. I wish you success in all your undertakings. And am, yours, &c., J. P."

"P.S.—Our liquorice earths take up so many hands at the time of year, that there are scarce any labourers to be got, at any rate, for other works."

COVENT GARDEN.

THE weather continuing fine, the supplies of garden produce is very much increased, and the quality is considerably improved. The display of flowers and plants is also greatly increased, particularly of the commoner garden description. *Rhubarb* is very plentiful; large waggon loads are pouring in from all quarters. *Asparagus* is also very plentiful, and very fine; so also is *Sea-kale*. *Radishes* now form one of the staple articles of the market. *New Potatoes* may be obtained, at from 1s. to 1s. 6d. per pound, but they are far from general. *Cabbages* make from 1s. to 2s. per dozen. *Greens* 2s. to 3s. 6d. per dozen bunches. *Brocoli* 2s. to 4s. per dozen. *Turnips* 3s. to 4s. per dozen bunches. *Carrots* 6s. to 8s. ditto. *Onions* 6s. to 10s. per bushel. *Celery* 9d. to 1s. 6d. per bundle. *French Beans* 1s. to 2s. per 100. *Radishes* 1s. to 2s. per dozen bunches.

CUT-FLOWERS are very plentiful, the generality consist of *Wallflowers*, *Narcissus*, *Anemones*, *Pimroses*, *Heaths*, *Geraniums*, *Fuchsias*, *Roses*, *Cinerarias*, *Camellias*, *Mignonette*, and *Epacris*. H.

THE LIVERPOOL HORTICULTURAL SHOW, MAY 19TH.

THIS wondrous hive of some of the busiest bees the world ever saw, boasts, in common with most of our high commercial emporiums, a really first-rate class of horticulturists; and it is a most pleasing task to record not merely the matters exhibited, but their rate of progress. I feel that I am a tolerably important witness in the affair, having had the honour of being annually selected as a judge there of general horticultural matters for some seven years consecutively. To me it is indeed a pleasure, for several reasons. I there meet a class of distinguished *practical* gardeners, with whom I can compare notes, and whom I should probably not see without such an occasion. Gardeners are known to be a social class of men, and, to the praise of the gardeners of our day, I may observe, they are not men of mysteries. Gardening now has no secrets; every principle on which success must be based has been reduced to the utmost simplicity; consequently, the mystery-men have passed away never more to return.

The morning of the 19th was, indeed, the first day of summer. In this respect the Liverpool show people are particularly fortunate: I can scarcely call to mind a bad show day for several years. What between Gribbin's band, the well-dressed company, the beautiful floral gems, &c., with every summer association, there was almost too much for the mind to endure. I may just point now to the chief features, and show where real advance has been made, and, perhaps, point to things of a suggestive character as to future progress.

In *Azaleas* there was a most marked progress. These, although inferior to their metropolitan congeners in

regard of size, were quite as well bloomed; in some, indeed, you could scarcely discern a leaf. Mr. Hadwen sent some good *Orchids*; six of his collection took the first prize. *Roses* were far superior to any I have ever seen at this exhibition; and the very indefatigable secretary, Mr. Leatherbarron, who seems very fond of gardening matters, took the first and second prizes. The *Heaths* were not extraordinary; nevertheless, there was some advance—J. Bibby, Esq., carrying the best prize. *Pelargoniums* were pretty good for so late a spring we northerners have experienced; the "fancies," as usual, attracting much attention. Of course *Cinerarias*, *Calceolarias*, &c., were in quantity, and many pretty *Gloxinias*, the Secretary gaining the first prize here. *Fuchsias* were very good for early work—most of them grown in the pyramidal form, which is certainly very elegant, and well adapted for the exhibition table. One of the most interesting groups was from the collection of —Fairrie, Esq., a well-known encourager of horticulture in Liverpool: it was a group of *striped marbled-leaved* exotics. Here was *Cissus discolor*, *Anacardium*, &c. The judges put a pointed mark on these things, as wishing to bring them out for the gratification of the public. Tropical *Ferns* and *Lycopods*—the latter would have satisfied friend Appleby—were in profusion; they seem quite at home in Liverpool. In *wax flowers* I was glad to see two classes of prizes—one professionals, the other simply amateurs. In the professionals, Miss Newton again distinguished herself, by taking first, second, and an extra prize; and in amateurs' class the worthy secretary's daughter, Miss Leatherbarrow, equally triumphed. Miss Powell, however, carried off an extra prize here.

The *Fruit* and *Vegetable* tables were pretty good, but not extraordinary. Capital black Hambro' *Grapes* were from Mr. Jennings, gardener to Earl Derby, as also excellent forced *Cherries*. Mr. Jennings is well known as one of our best English gardeners. In *Strawberries*, Mr. Cuthill will be glad to hear that his Black Prince produced the best dish at this show. I verily had a prejudice against this otherwise useful Strawberry, as to flavour, until I tasted these "Black Princes;" they were quite as good as the best Keen's Seedling.

Before I conclude this hasty sketch, I must beg to advert to a forced and artificial growth in some of the exhibition plants, perhaps the consequence of previous neglect, as evinced in the huge number of stakes and supporters to plants not by any means naturally requiring such assistance. I do not say that Liverpool is famous for it, but I do say that, if the practice is a fault, the people here have fallen into that fault. I should fear the labour standard must be low where such is the case; yet one can hardly fancy such harsh economy in days of high commercial prosperity. Certainly, nobody would exhibit flower-stakes except as such, and guaranteed by the exhibition schedule. These things must shortly give way to a better practice. As cultivation mounts in the ascending scale, extraneous props will descend, and the evil will cure itself. Somehow, nobody likes all these stakes, except the man who uses them, and who, according to the common bias of human nature, tries to feel justified in resorting to what is at the moment considered a "necessary evil."

On the whole, the show went off well—worthy of one of England's greatest gathering points; but such is the character of the advance, that tents will have to be multiplied speedily. The judges were Messrs. Staunton, Wilcox, Chambers, and Errington; and the awards, it would seem, were generally satisfactory.

R. ERRINGTON.

PROLONGING THE BLOOMING OF SALVIA GESNERÆFLORA.

A FRIEND of mine had more of the *Salvia gesneræflora* this time last year than he knew what to do with. After the general stock was kept in flower, from the middle of January, in the conservatory, by forcing, and to the beginning or middle of June, by retarding some of the plants, as Mr. Errington recommends for keeping back the more early blossoms, he had them all pruned on the close spurring system, leaving a few long shoots nearly their full length, and cutting-in every one of the side-branches to one or two joints. He rested them behind a high wall until they were in leaf, merely allowing them as much water as kept them from shrivelling; he then put in about forty cuttings of them from the best top shoots on the "breaks," as he called it, or the young shoots. These cuttings were only three joints long, and two of them only could be seen. They were planted on a north border, and under an old hand-glass, and were treated very much like the way Mr. Fish does the *Calceolaria* cuttings. This was shortly after the enormous hot days and restless nights we all experienced at the beginning of last July, and the whole garden was one hotbed at the time; so that, from the damp of the first good watering, and the confinement of the air under the glass, and over the cuttings, instead of these *Salvia* cuttings being, as we say, out-of-doors, and behind a north wall, they were in reality in the climate of Calcutta. They were soon rooted, and had three shifts before the end of October, and were among the second forced plants for the rooms by the end of February.

It is with the old plants, however, that I have to do, and they were planted out in a very exposed part of the kitchen-garden slips, without disturbing the balls, or receiving more stimulus than common watering until they took to the soil, when they were allowed to shift for themselves till the end of September. They were then potted in very small pots indeed according to the large size of the plants. There was little else but the old ball left, and all the new roots hanging out from it like a hair broom. The whole were then under potted, and, from the mildness and dampness of last autumn, the plants were left out-of-doors till near Christmas; but, from the cramping at the roots, they could not go without water more than one or two days all the time, and there was no difficulty about getting them forward into flower-bud, with a little forcing, among common plants and Roses, and as soon as the blossom-heads could be seen, the plants were liberally potted in strong, rich soil, and weak liquid-manure water from a stagnant pond was given them every time they wanted water, from that day to this, and nothing that I ever heard of paid better.

I have been running away from my own story all the time, and now I must turn back to last July, when some of these cut-down *Salvias* broke wretchedly badly, and the gardener ordered one of the men to throw them away. He desired his helping-man to get red of them, and the help told the boy to do it! When too many fingers are in the pie, we soon know the rest; and we may as well know that none of these east-off *Salvias* were ever thrown away, but some of them did actually starve by inches, for want of water, last August. Some rooted-out through the pots on to the hard gravel, and fared a little better, and some were watered in a mistake, all the time, by the truant boy, to whom the fault of their being in existence was traced at the end of the season, when the pots were wanted for the bedding-plants. When the rest of the plants had to be housed for the winter, these stunted *Salvias* were placed in sand under the stage of an old-fashioned greenhouse, and the little boy, or the young Linnæus, as they call him now,

saw that they wanted for nothing all through the winter. Before the end of April they were nearly in flower, and were planted out-of-doors, where they have flowered very satisfactorily all through the month of May, and promise to keep on for the best half of June, and although they are not in a regular bed, the story is told with a view to the successful use of this plant in two forms as a bedding-plant, to help us out at the end of the spring; first, as spare old plants come in, as in the above case, but with a more kind treatment throughout; and, secondly, from cuttings put in early in July.

The gardener, under whom all this originated, thinks that if the cuttings are made from pieces of the old tops when the plants are pruned in June, that the plants will neither flower so soon, nor so early, as when the cuttings are taken from the young wood made after the pruning. Now, this is just the very opposite of what I would guess, and what his own explanation of the principle involved would lead me to believe, but he is more practical than I am, or at least, he does not care so much about causes; if he gets a good effect from a *mixture of causes*, as he says, he is perfectly content. One thing is certain, that old plants of this *Salvia* may be kept on short commons all through the summer; that the end of a turf-pit, in a dry situation, would keep them through an ordinary winter, and that they will flower out-of-doors all through the month of May, and help to make a good variety when flowers are scarce in the beds and borders.

EARLY-BEDDED CINERARIAS.

I saw another practice lately, with which I was very much pleased. A bed of mixed *Cinerarias*, in full bloom, on the lawn opposite the drawing-room windows, and they looked as gay and flourishing as any thing could be by the beginning of May, and no doubt they will last all through the month, and so give more time for the plants in pots that are to occupy the bed through the summer. There is a light iron frame to place over this bed of *Cinerarias* every night, on which some clean canvass is stretched over, and nothing can answer better, except protecting the blossoms of wall fruit, of which the very best specimen I ever saw is in this very garden, and about which I must procure a drawing and description some day.

I have used canvass and calico covering for choice beds in May for a long time, but in the autumn, covering up the flower-beds at night has been a regular and expensive work for nearly twenty years at Shrubland Park. I am, therefore, glad to see and hear any of these plans for prolonging the enjoyment of flowers out-of-doors, being in operation and thought well of.

The long prevalence of easterly winds, and the lateness of this season, kept the earth so much colder than it usually is at bedding-out time, that all kinds of schemes must be had recourse to before we can expect to see the beds in a flourishing state. Watering the beds with soft pond water, from shallow ponds, is one of the best means of warming the earth, because that kind of water is always warmer than hard water, when the sun is powerful, and no strong water should ever be given to bedding plants till they take a firm hold of the soil.

STANDARD COTONEASTERS.

I saw another thing in this same garden which pleased me very much, and which ought to be well-known, but of which very few of us ever heard before; a plan by which standards of the *Cotoneaster microphylla* may be had as healthy as standard weeping *Sophoras* or *Ash*, for when this *Cotoneaster* is worked standard high, it always forms a weeping plant. They first began with it grafted on the common Thorn for a stock, but in a few years the two refused to agree well

together, and most of us gardeners in the country gave up the idea of ever seeing healthy, long-lived plants of this as standards. Some one has hit the right nail on the head, however, and here is a proof; a plant bought in three or four years ago, and was probably as many years old at the time it was bought, the stem and the head are now so united, so healthy, green, plump, and full of sap, that both promise to do as well and as long together as the apple and the crab, and this stock is either *Cotoneaster affinis*, or *acuminata*, as far as I could make out, but I desired the gentleman who owns it, to let me know if any sucker or side-shoot comes from the stock, by which I could at once determine the species, as it may turn out that but one deciduous species can sustain the evergreen. The practice is no secret in the nurseries, for the gentleman was expressly told that the stock was a *Cotoneaster*, and that there was no doubt about its doing well, and he was told the truth certainly. This is another instance of the old saying, that one can never enter a garden for the first time without learning something new to him.

The *Weeping Holly* is a most beautiful tree, I always think, when I see it worked six or seven feet high. There was a beautiful specimen of it in the Arboretum, at Bank Grove, out on the grass, and I saw abundance of it in Mr. Jackson's nursery, but I never saw the weeping *Cotoneaster* with him. I once saw a grafted *Weeping Sophora*, which spread out fifteen feet on each side of the stem after reaching the ground, and the shoots were trained as regularly as a fruit-tree, against a wall, on a raised trellis, and this device was exceedingly pretty. I also saw the original of the *Weeping Larch*, a seedling which appeared many years since, in Mr. Godsall's nursery, at Hereford, and it ran along the ground like a Strawberry-runner. D. BEATON.

IMPROVING ECONOMICALLY A NEGLECTED GREENHOUSE.

(Continued from page 81.)

LET it be kept in mind, that these remarks are intended solely for those who do not grudge a little labour, but who are under the necessity of making what display they can without entailing much expense in the way of purchasing. The few seeds I mentioned, at p. 81, were chiefly intended for summer and autumn decoration, but the time was indicated for sowing *Mignonette*, *Nemophila*, and *Collinsia*, for spring flowering. I shall, in a random manner, to-day, advert to a few more seeds to be sown for winter and spring blooming, chiefly the latter; and then, if space permits, mention a few things, the propagation of which should be seen about for a similar purpose.

In adverting to the sowing of seeds, I shall not be considered very egotistical if I mention, that I was never more delighted with any of my own handy-work than I was with a plant of *Collinsia bicolor*, grown in a London atmosphere too. It was self-sown in a border, taken up in the end of September, transferred into a sandy, poor soil in a five-inch pot, and housed in a greenhouse, from which frost was merely excluded. The plant was several times stopped, by nipping out the terminal buds to make it bushy. In the middle of January it got a seven-inch pot, and richer soil; and in March it got a twelve-inch pot, and the soil enriched with leaf mould. In May, it was nearly three feet in height, with one stake in the centre, and the diameter of the base of the cone more than twenty inches through, one mass of bloom.

The striking effect produced last season, in the large conservatory at the Horticultural Gardens, by numerous pots of this common annual, demonstrates what may be done with the cheapest materials.

Large plants of the *Nemophila insignis*, grown on without stopping, trained to rise about six inches, and then allowed to run over the sides of the pot, that pot being elevated upon another, and the graceful plant covering both with its masses of blue-white flowers, that would be quite as attractive a spectacle as the *Collinsia*, and such specimens, with young beginners, would do more to create a taste for the love of nature in general, and floral beauty in particular, and thence secure extra assistance and advantages, than any amount of grumbling, or sighing after the unattainable. Rarity in flowers, as well as everything else, must always be associated with the expensive; but the truly beautiful is spread around us so liberally, that the humblest in station, as well as the highest in rank, may thoroughly enjoy it. Here, as well as in other matters, we find that the greatest blessings of a beneficent Creator are those which are most common and easiest accessible to all His creatures.

I mentioned *Schizanthus* for blooming in summer; but though I have not grown it in pots for many years, I do not know anything more splendid for early summer and spring blooming. For this purpose, the seeds should be sown about the middle or end of August, and the plants potted singly, or three in a four-inch pot, and just begun to grow before the cold weather sets in. A dry, cool place, in a cool greenhouse, is just the place for them. The soil should be rather sandy, and have no manure in it. The freer it is of all foreign ingredients, the better will the plants get through the winter. They must be kept from flagging; but as soon as the roots fill, or take hold of the pots, they should be kept rather dry, giving no more water in the dark days than is absolutely necessary, and never allowing that to touch the stem of the plant if you can help it. By the middle of January, the plants may have a small shift if the weather is clear, later if it is dull; and by the middle of March they may be put in nine or twelve-inch pots to bloom. In these two last shiftings, but especially the last, rotten leaf mould, or very rotten dried dung, may be incorporated with the soil, and pieces of rough peat earth, or charcoal, to keep it open. In potting, disentangle the fibres a little with a small pointed stick, that they may enter freely into the new soil, and until they begin to occupy that soil, be very careful not to puddle it with water. Give plenty of drainage. Be sure the plants are well watered before you shift them, and if you have put three plants in a small pot it is best not to separate them. One looks best generally, however, and a seven or eight-inch pot will grow a very nice plant. We do not expect you will rival the *Collinsia* referred to at your first attempt; but a plant half the size would look well. Plants of *Schizanthus*, from three to four feet in height, and branched with bloom from top to bottom, are not uncommon. Half of that size, well done, will look charming. With the smaller sized pot, one shift would do, and even with the larger sized, could we depend upon your understanding, how, in such circumstances, to wield the water-pail—namely, never to soak the soil farther than you have reason to believe the roots have reached.

The time of sowing, and general management detailed, are based upon the desirableness of not having the flower-stem appear until you have obtained a strong healthy vegetation of leaves. If the stem appears in the autumn you cannot expect much of a specimen. The same rule holds good, but in most cases less trouble is involved, with all pretty annuals that bloom freely out-of-doors in summer. Such as *Wallflowers*, used as an annual, *Candy Tufts*, &c., which look very beautiful in spring, when well managed, and are peculiarly well suited for decorating rooms, &c., and thus would save the ruin of many expensive plants. The whole expence of such things is their cultivation. A few pence will

get enough of seed. The best sorts of the *Schizanthuses* are *retusus*, *Hookeri*, *porrigens*, and some garden varieties, such as *Priestii*.

CINERARIA.—The treatment of this has frequently been given. I confine myself, at present, to raising them from seeds. A shilling packet, from a respectable tradesman, who grows good kinds, such as those advertising in these columns, will give you a fine supply. I would advise sowing at three times—*now*, the beginning of August, and the middle of September. Prick out the present sowing, as soon as they are up, into pans, a couple of inches apart, and then, when getting close together, pot them singly, or plant them out in rich, sandy soil in a north border. The last will involve least labour. By the middle of September, raise them carefully with balls, and pot them, and keep them in a shady place until they are again growing freely. These will generally supply you with plenty of bloom from the end of October to the new year. The second sowing, pricked out and grown on in pots, will succeed these. A six-inch pot will grow fine flowering plants. The third sown, kept thickly in pans or pots, shifted singly after the new year, and shifted again, will succeed the second sowing, and thus give you bloom from this interesting tribe alone until the end of June. A few sown in spring would continue the whole season with one tribe; but unless you have a very shady place, they stand a Midsummer sun so badly, that at that season they are scarcely worth the labour of keeping them healthy and clean. Here, fine heads of bloom, just as in the case previously alluded to, depends on securing fine, healthy growth before the flower-stems appear. This is one of the most accommodating plants, as whenever there is healthy growth, and the roots get to the sides of the pot, the flower-stems are sure to appear. No matting of roots must be allowed if you wish a fine large specimen. For room decoration, these plants, from seed, are invaluable. Nice heads of bloom can be easily obtained in four-inch pots; and one other advantage is, that these, when in bloom, may be turned out of their pots, and packed firmly in moss or earth, in baskets or vases, without sustaining injury. When an ornamental vase is to be thus filled, it is desirable to have a vessel inside of it, of *zinc*, and moveable; and it will generally be found that three or four small healthy plants turned out into it will make a better show than one large one. But in this case, seedlings cannot be so well adapted as plants raised from cuttings or suckers, so as to secure one uniform colour. The soil for the last potting should be rich and light, containing a fair portion of pure sand and leaf mould. I have, however, grown fine specimens in roadside soil alone. Whenever the flower-stalks appear, weak manure-water may be freely given.

CHINESE PRIMULA.—This is one of the best of our winter-flowering plants, when the temperature does not often fall below 45°. For this purpose, the pink and white varieties cannot be sown too soon. If you could give them the assistance of a cucumber-bed until they were up, they would like it all the better. As soon as you can get hold of the seedlings, prick them out into shallow pans 1½-inch apart, or in pots, three parts filled with drainage, and in sandy soil, with a little very fine leaf mould or peat. Keep these in a warm, rather shady position in the greenhouse. As soon as the foliage meets, transfer three of these plants, at equal distances, to the sides of a four or five-inch pot; and when these meet again, pot them singly. A five or six-inch pot will grow a fine plant. In the warm days of July and August the plants must be shaded. If they are placed on boards on the north side of a wall or fence they will do very well. By the middle of October, they may obtain an intermediate position, as respects light, either out of the house, or in it. By November, they will take all they can get, and will present you during the winter

with plenty of bloom. Another sowing, made in August or September, kept in a small state during the winter, and potted off in February or March, will yield nice blooming plants in the early part of summer. But after May, if a continuance of their bloom is desirable, they must have a cool, shady situation.

HERBACEOUS CALCEOLARIAS.—Shrubby ones, when obtained, are generally continued by slip propagation. The large blooming, herbaceous, and semi-shrubby kinds are easiest managed from seeds. There is a little difficulty in preserving even a fine variety, more especially if allowed to bloom as it likes. When a mass of rich bloom, instead of the tests and criterions of floristry, is the object aimed at, then sowing seed is the way to secure economy and variety. A shilling packet would be sufficient to supply a small house, but if from an extra fine stock, I would advise giving half-a-crown, though the seeds might all lie on the point of a pen. Even from that small quantity you may obtain hundreds of plants. The seed is so small, that you had better re-read what was said about sowing them lately. I think that here, also, without offence, I may just give a hint to seedsmen, not to mix small seeds with anything else, as thus the inexperienced are apt to imagine that they have not got the article at all. I recollect, that the first sowing I made of these herbaceous Calceolarias, I had the seed presented by a great gardener, and also an outline of their culture. I sowed it with great care; and, as it vegetated nicely, I was feasting my eyes already on their beauty; but, as the seedlings got larger, they seemed to get stranger and stranger every day, until it turned out that they were nothing but small Lobelias, of which then I had previously a superabundance. No more attention, therefore, was given them, though it is likely enough, if I had pulled out all these Lobelias, I might have found Calceolarias after all. Now, considering the hands through which seeds sometimes pass, and the likeness in size of the dust-like seed of the Lobelia to the Calceolaria, I easily saw how this might happen, and my friend have not the least idea of the matter. It is rather singular, that from a small packet obtained last autumn, from a most respectable establishment, I obtained plenty of Calceolarias, but a great many more small Lobelias. The soil in which they were sown was all fresh, and I recollect, perfectly, that I was sowing no other seeds of any kind at the time. However these things are brought about, they often constitute a great discouragement to young beginners, and often a complete disappointment.

Seed to be obtained now will be of last year's saving; but that will be of less consequence, as if it is good it may be kept for years. If you wait for the present year's seed, you would not be able to get it before July. If you had it now, it would not be advisable to sow more than the smallest portion, as the plants would not bloom until rather late in the autumn, and they would require a very cool situation during the summer. The season in which such plants are most effective for display is from the last days of March to the middle of June; after that time they must be kept more cool and shaded. For this purpose, I recommend two sowings; the first to be made in the second or third week in July; the second in the second or third week in September. The first sowing must be made in a cool, shady place. As soon as the plants are handable they should be pricked out into pans, and these again kept shaded, and each plant may have its small pot by the beginning of October. These should be kept slowly growing until Christmas, after that they will want a shift, and a more warm and close position. By the end of February they should receive their final shift; a six-inch pot will grow a nice plant.

The great point, as with the Cineraria, is not to stunt

the plant by want of room, or other causes, until you wish them to bloom. Before that period, a dash with cold water over the foliage, and the pots so placed that the sun does not strike upon them, are the best preventives from insects, and the best security for health. When, however, a fly appears, smoke directly; never wait for a second. The soil should be sandy loam, enriched with very rotten dung, or leaf mould, both in a rather dry state. Failing these, use a little small charcoal in the soil, and give weak manure-waterings. Plants from the second sowing may partly be pricked out, and partly kept in the seed pan until after Christmas. They will then want growing on, and will come in in succession to the others. The growth of such plants is greatly promoted, after the sun gains power, by setting the plants on moss, or plunging the pots in it. By hybridising the best blooms, and saving the seed, the first cost will be all that will be necessary, and therefore it will be advisable to get the very best possible at first. In saving seed, do not be covetous, two or three pods on a plant will be sufficient. In fact, these, well ripened, would contain as much seed as a person with a small house is likely to find room for, when changed into seedlings. I will, before long, say a few words on getting some plants from cuttings. R. FISH.

CONIFERÆ.

(Continued from page 100.)

THUJA (The Arbor Vitæ).—My pleasant task is nearly ended. This genus, *Thuja*, and *Widdringtonia*, will complete my catalogue of this most interesting and useful tribe. I have visited most of the collections of these plants in England, and wherever the cultivators were readers of THE COTTAGE GARDENER they have expressed themselves much pleased with my remarks. This is very gratifying to me, and I take this opportunity of expressing my gratitude for the kind reception of my remarks on their culture. I have only to add the account of the two above-named genera, and a brief description of the modes of propagating this widely-spread and useful tribe.

THUJA FLAGELLIFORMIS (Whip-shaped Thuja).—A scarce species, of which very little is known.

THUJA HYBRIDA and **T. INTERMEDIA**.—The same remark applies to these two as to the preceding.

THUJA OCCIDENTALIS (Western or American Thuja).—This is a well-known species, and very hardy. It is much used in the nurseries as a hedge for sheltering more tender shrubs. It thrives best in a moist soil. In Canada, its native country, it rises to a considerable size, so much so as to rank as a timber-tree. The timber is much valued, being so very durable. It is chiefly used, on that account, for making articles of furniture. There is a variety with the foliage prettily variegated; and at that oft-referred-to place, Elvaston Castle, there is a long line of this beautiful variety which has a most pleasing effect. This species grows quickly, is more open in habit than any other, and, as it is so hardy, and very moderate in price, it may be planted freely as a nurse plant for more tender species.

THUJA ORIENTALIS (Eastern or Chinese Arbor Vitæ).—It is the *Biota orientalis* of Endlicher. A handsome, densely-branched species, of a rich dark green colour, very suitable to plant as a single specimen in the Pinetum. In very severe winters, in exposed situations, the foliage is often turned brown on the windward side. There are several varieties, the handsomest of which is named *T. O. aurea*, a dense, low bush, with yellowish-green leaves. The next are *T. O. incurvata*, *T. O. Nepalensis*, *T. O. stricta*, and *T. O. variegata argentea*.

THUJA SIBERICA (Siberian Arbor Vitæ).—In my

opinion this is the handsomest, as well as the most hardy of the whole genus. This winter, in my grounds, though removed in October from a considerable distance, I have specimens four feet high, looking as fresh and lively as they might be expected to look in the autumn in the most favoured locality, whilst the Chinese species have suffered greatly, several of them being quite dead. It bears removal from a distance better than any other, because the roots are more dense. I cannot write too much in its praise as an ornamental evergreen tree. Every grower will, I am quite sure, agree with me, that it is a truly beautiful and extraordinarily hardy tree. It, however, thrives best in a deep, cool loam.

THUJA PENDULA (Weeping Chinese Arbor Vitæ).—A very singular species. There is a fine specimen of it in the Royal Gardens, at Kew, and another in the Apothecaries Garden, at Chelsea. It is very rare.

THUJA PLIATA (Plaited Arbor Vitæ).—A native of Mexico, and, consequently, rather tender, but it will live and thrive in the south, but requires a slight protection more northerly.

WIDDRINGTONIA, so named in honour of Captain S. E. Widdrington, a meritorious naval officer, by Professor Endlicher, a celebrated German botanist. The genus is composed of two or three species, all, excepting one, natives of the Cape of Good Hope. They are little better than shrubs, and well adapted to ornament a winter garden or conservatory. In such a place they do not grow so large and fast as to become unwieldy or unsightly, and are curious and pleasing in their habit. They should be potted in good, sound, pure loam, well drained. In Devonshire and Cornwall they will live in the open air, and, probably, also in Ireland. And here I would remark, that all Coniferæ that are said to be rather tender should be planted upon raised mounds, and should not even be planted there till they have attained a considerable size, and become stout and woody. Young, tender plants are almost sure to perish the first severe frost they are exposed to, but old, sturdy fellows will bear the breeze with impunity that kills at once their flush-grown younger fellows.

WIDDRINGTONIA CUPRESSOIDES (Cypress-like Widdringtonia).—An elegant tree, growing from ten to twenty feet high in its native locality. It is the *Thuja cupressoides* of Linnæus.

WIDDRINGTONIA ERICOIDES (Heath-like Widdringtonia).—A native of Japan, and more hardy than the rest of the genus. It has much the appearance of a strong-growing Heath—hence its name.

WIDDRINGTONIA JUNIPEROIDES (Juniper-like Widdringtonia).—A low, elegant bush, seldom exceeding six feet in height. The leaves are the broadest of the genus.

Propagation.—The space allotted me is full, and, therefore, I must defer this concluding section on Coniferæ till the next opportunity. T. APPLEBY.

(To be continued.)

THE PICOTEE.

This flower is, at least, as lovely as the Carnation. The culture, soil, and propagation, are exactly the same for both. They are so much alike in foliage and habit that it is impossible to distinguish them by the plants. It is in the flower that the difference is seen. In the Carnation, the colours upon the white ground are disposed in stripes, running upwards from the bottom of the petals, sometimes broad, and sometimes narrower; but in the Picotee, the colour is disposed on the outer edge of each petal, and the more even this is the more perfect the flower is.

I think the Picotee even more beautiful than the

lovely Carnation; but tastes differ, yet it cannot be denied that there is a delicate neatness about this flower that the Carnation does not possess. It has, too, the advantage of having a pod that opens in general more regularly all round than that of the Carnation. The other properties, such as form and size, are exactly the same.

It now only remains with me to give a list of the best varieties for 1853. Picotees, like the Carnation, are divided into classes, of which there are seven. They are classed according to colour, and the quantity of colour on the edge. The classes are—1. Red, heavy-edge. 2. Red, light-edge. 3. Rose, heavy-edge. 4. Rose, light-edge. 5. Purple, heavy-edge. 6. Purple, light-edge. 7. Yellow grounds, without any distinction as to the depth of edge colour.

1.—RED, HEAVY-EDGED.

<i>Ada</i> (Barrenger); extra.	<i>Lady Macbeth</i> (May); new; extra.
<i>Ariel</i> (Headley); very fine.	<i>Mrs. Trahar</i> (Dixon).
<i>Bellona</i> (Morris).	<i>Mrs. Meynell</i> (Ely).
<i>Christabel</i> (Costar); extra.	<i>Mrs. Norman</i> (Norman); extra. Probably the finest of its class.
<i>Duke of Wellington</i> (Sharp).	<i>Pearl</i> (Kaye); a full flower; extra.
<i>Emperor</i> (Ely); extra.	<i>Prince of Wales</i> (Morris); fine.
<i>Glory</i> .	<i>Unique</i> (Hudson).
<i>Gulio Romana</i> ; extra.	
<i>Isabella</i> (Wildman); extra.	
<i>James II.</i> (Norman); a good clear white; new and good.	
<i>King James</i> (Headley); fine.	

2.—RED, LIGHT-EDGED.

<i>Duchess of Sutherland</i> (Burrough); excellent.	<i>Jenny Lind</i> (Edmonds); extra.
<i>Emma</i> (Burrough); large petals, well-edged, and fine.	<i>Mary</i> (Dodwell); extra.
<i>Emma</i> (Norman); extra.	<i>Mangiana</i> (Burrough); very fine; a bold flower.
<i>Ernest</i> (Edmonds); very good.	<i>Red Edge</i> (Garrett); very clear white with perfect edge.
<i>Fair Ellen</i> (Nicklin).	<i>Yorkshire Hero</i> (Hepworth); extra.
<i>Gem</i> (Youell); a fine variety.	<i>Unique</i> (Barrenger).
<i>Henry VIII.</i> (Kirtland).	

3.—ROSE, HEAVY-EDGED.

<i>Borderer</i> (Barraud); a good variety.	<i>Princess Royal</i> (Wilmer).
<i>Captivation</i> (Headley); extra.	<i>Victoria Regina</i> (Morris); a fine variety; new.
<i>Fanny Irby</i> (Wilson); very good.	<i>Venus</i> (Headley); extremely fine.
<i>Grace Darling</i> (Morris); fine.	<i>Unexpected</i> (Morris); new and good.
<i>Miss Rosa</i> (Merryweather).	
<i>Princess Royal</i> (Morris).	

4.—ROSE, LIGHT-EDGED.

<i>Countess Howe</i> (Morris).	constant and well-formed flower, and a good breeder.
<i>Fair Rosamond</i> (Twitchett).	<i>Princess Royal</i> (Garrett). A clean, well-formed variety.
<i>Lady Dacre</i> (Garrett).	
<i>Mrs. Barnard</i> (Barnard).	
The best in its class; a	

All the varieties I have named in this fourth class are very good.

5.—PURPLE, HEAVY-EDGED.

<i>Alfred</i> (Dodwell); extra.	<i>Mrs. B. Norman</i> (Norman); truly good.
<i>Countess of Wilton</i> (Holland); very fine.	<i>Nulli Secundus</i> (Mitchell).
<i>Duke of Rutland</i> (Holly-oake); very fine.	<i>Portia</i> (May); extra.
<i>Ernestine</i> (Turner); good.	<i>Princess Alice</i> (Wood); a good old variety.
<i>Lady Harriet Moore</i> (Turner); extra.	<i>Prince Arthur</i> (Fellows); extra.
<i>Lord Nelson</i> (Norman); clean white; excellent pod; free from spot; a fine variety.	<i>President</i> (Burrough); very fine.
<i>Marquis of Exeter</i> (Holliday).	<i>Queen</i> (Kaye); pure white; edge rich purple and even; a fine variety.

6.—PURPLE, LIGHT-EDGED.

<i>Amy</i> (Burrough); extra fine.	<i>Jane</i> (Norman); superior to Sharp's <i>Elegant</i> .
<i>Beauty</i> (Shaw); fine.	<i>Juliet</i> (May); a fine variety.
<i>Delicate</i> (Holliday); extra fine.	<i>Juno</i> (Mathews).
<i>Duke of Newcastle</i> (Burrough); extra.	<i>Miss Annesley</i> (Kirtland); extra.
<i>Exquisite</i> (Hudson); very fine.	<i>Prince Albert</i> (Crask).
<i>Ganymede</i> (Fellows).	<i>Regina</i> (Cox); a very fine variety.
<i>Haidee</i> (Fellows); an extra fine flower.	<i>Ophelia</i> (May); extra.

7.—YELLOW PICOTEES.

<i>Ariel</i> (Brock); extra.	<i>Parsee Bride</i> (May); very excellent.
<i>Charles X.</i>	<i>Prince of Wales</i> (Brock); new and good.
<i>Countess of Ashburnham</i> ; extra.	<i>Proserpine</i> (Groom); extra fine.
<i>Duke of Wellington</i> (Brock); fine.	<i>Queen Victoria</i> (Martin); good.
<i>Euphemia</i> (Barraud); very good.	<i>Romulus</i> (Wilmer); neat and good.
<i>George III.</i> (Finsley); extra.	<i>Topaz</i> (Hoyle); fine colour.
<i>Malay Chief</i> (May).	
<i>Mount Etna</i> (Hoyle); one of the very best.	

T. APPLEBY.

PLANTS WHILE IN THE SEED BED.

It not unfrequently happens that good seed is sown on good ground, and under circumstances apparently favourable, and yet there is "no produce," so that the disappointed cultivator is often led to conjecture many things, and often erroneous ones, too, ere he hits on the right one. That he should not at once find out the real cause of his want of success is not to be wondered at, since the variously directed experiments of a host of otherwise successful horticulturists have not been able to discover a preventive to that disorder in the Potato which has certainly diminished its utility, if it does not ultimately exterminate it altogether.

Now, though I certainly believe the uninformed Spitalfields weaver, or Manchester cotton-spinner, would more easily overcome the difficulties attending the raising of a few Cabbage plants, than the learned and scientific horticulturist would that of ensuring a crop of Potatoes against blight and other evils, still there are many who know not the dangers these *Cabbage plants* are liable to; and to them I now more especially address myself, and beginning with that very important family, for whose services at table we owe so much, let us consider how we are to proceed, in order to have the greatest amount of success. In the first place, as we have the parent of the family amongst us, growing and sowing itself on the almost inaccessible places of our southern coasts, it would naturally appear that the calcareous matter found there, as well as the highly-impregnated state of the air with saline particles, might, at certain times, be conducive to its general welfare; but, as the saline atmosphere cannot well be imitated in more inland stations, and the chalkey is both inconvenient and often unattainable, some other remedy must be proposed, because, though we are aware that the present race of cultivated vegetables inherit, to a certain extent, the features of the original, still they are so altered and modified as not to leave many traces of their parentage, except such as a botanist would discover.

Now, as I deem it no disgrace to borrow an idea now and then, I confess that, next to the market-gardener, who raises plants for his own use and for sale, by the thousand, the humble cottager, whose spare hours and attention is devoted to the care of his garden, is the next best hand at rearing young plants of this and kindred tribes; his modest and unassuming little corner, where a

few *Cabbages* are sown, of a kind himself or a neighbour has grown for years, is sure to succeed, because daily attention is bestowed on the little spot, and the arch-enemy met and repulsed at the outset; and by occasional stirring amongst the plants, with a stick, &c., a degree of strength and free growth is attained by them which the more fashionable horticulturist in vain looks for in the off-handed manner in which he treats such common articles as a "lot of Cabbages." In fact, the odds are, that he is likely to be without any, unless some assistant takes their case in hand, or a friend assists him with other plants.

Now, there is no mysterious agency at work in forwarding the poor man's plants; in fact, he often feels a pleasure in communicating how he treats them to all who may be willing to listen to his simple recital of the means he has adopted to secure so useful an end. He combats disease by fortifying the patient in such a way as to resist its attack. This is done by the aid of manures plenteously applied; in fact, to such an extent as completely to saturate the ground with them, thereby urging on the young plant by supplying it with such nourishing food, so as speedily remove it beyond the reach of those pests which prey on those of a similar age, but differently grown. This is no imaginary tale; the richly-manured ground in the neighbourhood is but little affected by the Turnip-fly, slug, and other enemies to young and delicate vegetation. The rapid and vigorous growth that takes place in the first instance soon out-grows the attack of the first class of depredators, while the frequent diggings and other workings among the plants, prevent the latter from increasing to that injurious extent they do in a more tardy cultivation.

From this it will be seen that the market-gardener escapes the ravages of the foe by the mere application of unlimited means, unassisted by any of the nicer points which enable the cottager to rear his plants; the former, in fact, accomplishing his object by sheer strength, what the other has to do by stratagem and untiring attention, in a way from which we may glean a useful lesson, because, instead of advantages of position, it is not likely but the poor man has to sow and rear his little breadth of cabbages under the shade of a fruit-tree, and on ground occupied by its roots, if not by some others likewise; and he has to watch and nurse his plants in such a way as to give to them every chance to succeed which art can bestow.

If the weather be very dry, frequent waterings in the evening soon swell the seed vessels, and the infant plants soon show themselves above ground; then, to protect them from the "fly," the wood ashes from his fire (cool, but dry and fresh) are dusted over them, which imparts a stringency very distasteful to the whole of the insect family, and generally sufficient to keep them at bay, while its virtues remain unimpaired by the atmosphere, which, however, is not long. A repetition is, therefore, necessary, and sometimes this is often to do, until at length the plant out-grows the evils to which it is subjected to in its early career.

When more advanced, his plants require his further aid; for, as they advance, the evils of their position will be more apparent. To meet this, he, therefore, generally applies such stimulating matter as comes in his way; a pail-full of soap suds is not a bad preventive to "the club-root;" while any other little thing, in the way of liquid-manure, is applied with equal care and discrimination; while, to remedy the evils resulting from the ground getting hard from the caking of the sediment left on the top, it is broken up with a pointed stick, and the plants left to enjoy those healthy exhalations which fresh turned-up ground impart to all vegetation.

Under this fostering care, the plants prosper so long as they are capable of deriving their sole nourishment from such artificial means. Afterwards, the evils of

their position (if it be a shaded one), cannot be concealed, for the plants will get weak and leggy; they are, therefore, to be transplanted afresh before that evil occurs, in order to benefit by a more open exposure. In thus drawing attention to the cottager's mode of nursing his plants, I wish to put our more favoured brethren on the right path. The difficulty of obtaining "a plant" of many of our most common garden vegetables, in difficult seasons, like the present one, is attended with some trouble, and very often a fearful loss. To prevent this, is, therefore, of importance, and we will return to the subject.

J. ROBSON.

SWEDISH TURNIP CULTURE.

(Continued from page 128.)

THE second division of our subject, is the tillage of land, so as to render it clean, and free from couch grass.

The first consideration is the proper time for fallowing, or first ploughing the land, and this will, of course, vary, according to the system of farming, and the rotation of crops adopted; for it is now the practice, upon many well-managed farms, where the greatest amount of sheep stock is kept, and upon chalk and gravel soils, not infested with couch grass, to sow all, or nearly all, the land intended for Swedish Turnips, with *Rye*, or *Winter Tares*, and sometimes with *Trifolium*, to be fed off with sheep in the spring months, and then to be sown with Turnips, after one ploughing. A good number of harrowings and rollings are required, so as to bring the land into a good tilth by securing a perfectly pulverised surface; and, in order to effect this, it is essential that the land should be reduced by rolling and harrowing, immediately after ploughing, and, if the weather is very dry, on the same day as the ploughing, for upon this point rests the chance of retaining sufficient moisture in the land to vegetate the seed, and insure the action of the manure, and a rapid growth of the young plant.

There is, also, another rotation of cropping, which would influence the mode of proceeding for the culture of this root. Thus, upon farms where the soil is dry and warm, and where the system of keeping early lambing ewes is adopted, thereby rendering necessary a rotation of close cropping, a part of the land intended for the growth of Swedes should be sown with Tares and *Trifolium* soon after harvest; but upon the remaining part I have adopted a plan, upon my own farm, of Italian Rye-grass, which gives a great abundance of sheep food during the months of October, November, and December. The first, or fallow ploughing, in this case, is deferred until the middle of December; and the after-culture, upon which I will further remark, will, of course, commence in the spring, as soon as the land is in a fit state for working.

Having been, for many years, an advocate for less ploughing than is usually done in preparing land for the Swede crop, and believing that the most essential points, in cultivating for this root, are the complete pulverisation of the surface, and the firmness of the bottom soil, I was indeed, a few years ago, to undertake an experiment, for the purpose of proving to what

extent a reduction of expenses might be made in the tillage of the land.

For this purpose, I selected a field of ten acres, the soil a deep loam, upon brick earth, and the previous crop wheat, which had been manured and sown after one ploughing out of clover lea. Having been seeded with Italian Rye-grass in the month of March, it afforded food for sheep from September to December. After being divided into equal parts of five acres each, the following course of tillage was pursued:—

No. 1.—*Five Acres under the usual system.*

	£	s.	d.
In December, one deep ploughing, at per acre	0	12	0
In February, two draggings -	0	1	6
" two harrowings -	0	1	0
" one rolling -	0	0	9
In March, one ploughing -	0	10	0
" four draggings -	0	3	0
" four harrowings -	0	2	0
" two rollings -	0	1	6
In May, one ploughing -	0	8	0
" two draggings -	0	1	6
" four harrowings -	0	2	0
" two rollings -	0	1	6
	£2	4	9

No. 2.—*Five Acres under the improved system.*

	£	s.	d.
In December, one deep ploughing, at per acre	0	12	0
In April, two draggings -	0	1	6
" two harrowings -	0	1	0
" one rolling -	0	0	9
In May, one scarifying -	0	5	0
" two harrowings -	0	1	0
" one rolling -	0	0	9
	£1	2	0

The following statement will show the crop of Swedish Turnips, for which the preparation was, in every respect, similar, except as regards tillage:—

No.	Cost of Tillage per acre.	Cost of Manure per acre.	Time of Drilling.	Sort of Swede.	Kind of Manure.	Weight of produce per acre.
1	£ s. d. 2 4 9	£ s. d. 2 2 0	May 2nd	Skirving's.	Night soil, Bones, and Ashes.	tns cwt qrs 27 12 0
2	1 2 0	2 2 0	Same.	Same.	Same.	28 7 0

Although I am by no means prepared to advocate what I here term the improved system, *under all circumstances*, still I am of opinion, that upon every soil free from twitch or couch grass, it may be carried out successfully; as it will be seen, from the result of this experiment, that the improved system of tillage cost less than the usual method by 24s. 9d. per acre, whilst the acreable produce was greater by 15 cwt.

I have invariably found, when the season has been dry, in the cultivation of strong or mixed soils, the weather-beaten surface alone will ensure a fine tilth; it being always doubtful, after spring ploughing, whether a fine surface can again be obtained in time for sowing, and, if obtained, it will be by the application of costly labour; whereas, by using the scarifier instead of the plough, the tillage can be deepened without turning the soil, and still retain the stale and pulverised surface.

Again, with regard to light, chalky, or gravelly soils, by ploughing we lose the moisture of the land which is required for the vegetation of the seed—the time of sowing is often delayed, in consequence, beyond the proper period. There is, also, another great objection to the spring ploughing of land, for, being made very dry, it is highly productive of the wireworm and grub, the two most destructive insects by which the plant is attacked.

It may, perhaps, be scarcely necessary to observe, that the advocates for much ploughing are compelled, in wet seasons, to lay by the plough until the return of fine weather, when it is often found so much time has been lost, that the land cannot receive the usual number of ploughings before the time of sowing has arrived, in which case the scarifier will prove a good substitute for the plough.

JOSEPH BLUNDELL.

(*To be continued.*)

THE DANGER AND THE DELIVERER.

By the Authoress of "My Flowers."

I KNOW there is at least one family in England who will be interested to know something more of Betty C—, the "Widow Indeed." It is pleasant to know of a surety that we are writing what some one or other will certainly be pleased to read, and therefore I shall give this little account with real pleasure, not only because it will be welcome to two or three hearts, who are unknown and yet well-known to me, but because it signally displays the tender love, the faithful promise, the watchful care, of the covenant God; and loudly says to us all, "Blessed is the man that trusteth in the Lord, and whose hope the Lord is."

The little sketch I gave, some months ago, of the "Widow Indeed," was—the means appointed by God for giving her "food convenient for her," and fulfilling His promise to her, as she *believed* He would. Let us all take example and encouragement, not ignorantly and sinfully to *presume*, but humbly, faithfully, and *intelligently* to "*trust* and not be afraid."

It pleased God, in whose hands are the wills and affections of men, to stir up two hearts to help this widow, and, by their kind liberality, to make the residue of her days easy, and indeed abundant. She now wants for nothing; and it is delightful to see her face quite radiant with happiness, and to observe the unchanged carefulness and thrift she still maintains. Nothing can persuade her to spend one farthing more than she really needs; and she is as saving and as self-denying as ever. The only little outbreak of grandeur we ever witnessed was the air with which she conferred her instructions to the "gingerbread man" to bring her a larger supply! Poor Betty! she treasures up her little earnings with the strictest integrity, that she may not be extravagant in that which is so generously and munificently bestowed. Let all this be a lesson to high and low, to use, with moderation and care, the good things sent to us by the Lord, that we may have "to give to them who need," and not to misuse the much or the little He sees fit to entrust to us.

Two months ago, a very severe alarm and shock befell Betty, through which she was almost miraculously preserved. It was a pouring Sunday; the rain fell in such torrents that scarcely any one could get to church, and it lasted till about three o'clock in the afternoon. Betty told me afterwards, that something seemed to incline her so strongly to fill all her tubs and pails and pans with water, that in spite of the rain, she got every empty vessel she could find out in her little back yard to catch the water, and they very soon brimmed over. She said she had never done such a thing before, for there is a well close to her front door, and a neighbour draws whatever she requires. This is a very remarkable instance of God's providence, and plainly and affectingly shows how He condescends to regard, not only His humblest creatures,

but their simplest concerns, and proposes all things against the time of need.

In the evening of this day, after afternoon service, a rumbling noise in Betty's chimney began to be heard. Her cottage is one of two, which form the same tenement, and the chimneys are back to back. Betty, with characteristic caution, always keeps her chimney clean, but her neighbours are careless people, and it was soon discovered that their chimney was on fire. The bricklayer, who was on the spot, assured Betty all was right for her, and she need fear nothing; so she quietly sat down to her tea; but in one moment such a volume of burning soot fell down her chimney and into her kitchen, that the place seemed altogether on fire. Poor Betty rushed through it to the door, scarcely knowing where she went, and fell heavily into the street. She managed to get up, and then fell again quite helplessly. Neighbours raised her, and carried her into a cottage, where she lay insensible for some time, during which period the fire was put out; but the wind blew so violently against the front door, that it could not be opened to get water from the well, because it increased the flame of the burning soot. Now was seen the providential care of the Lord! The tubs and pans Betty had filled in the morning at the back door were the means of preserving both little cottages. That extraordinary and ready supply of water was enough to extinguish the fire. But for that, both cottages must have been destroyed. The public-house, a thatched building, stood close to the spot, and the burning flakes fell so thick upon it, that had not the rain in the morning fallen in the torrents it did, nothing could have prevented its taking fire. Thus, while men were busy with other things, and other thoughts, the Lord was preparing all things to work His will. He prepared the rain, and the full vessels to quench the fire. He chose, in His infinite wisdom, to send the danger, and the deliverance; to prove to the children of men, that all things arise from His bidding; and that if we will but fearlessly and believingly trust in Him, nothing can harm us. A cottage chimney on fire is a trifling thing. The rich man may drive by and disregard it as beneath his notice; but it is not beneath the notice of the King who sitteth on an everlasting throne. He can make even it show forth His goodness; and He deigns to prepare the simplest occurrences connected with it.

But poor Betty! Betty recovered her senses, but she was very weak and poorly for some days, and could not sleep without starting up in alarm of fire. She was much hurt in her side, and complained for some weeks of a settled pain there, which made us fear internal injury; but she is a very remarkable woman, and fights through illnesses that many younger persons would sink under. She has a powerful constitution; but, she has an arm thrown round her which shields her from every harm.

One morning, Betty waked early with a sort of cough, and was terrified at perceiving herself covered, as she fancied, with blood. It was so indeed; she had coughed up a great quantity, but from that moment the pain in her side was gone, and she is now perfectly well and as cheerful as ever. Upwards of ninety, as she is, this shock was very likely to prove fatal to her; but she still "muddles about," and looks as well as she did before. She is fully sensible of the source from "whom all blessings flow," of the Spirit that led her to prepare for the approaching danger, and of the arm that has sustained her from her youth even until now. Ah! if we could all feel this! The same God, "even our own God," watches over us, prepares our smallest, simplest circumstances, and overrules all for our good! "Oh that men would therefore praise the Lord for his goodness; and declare the wonders that he doeth for the children of men!"

Readers! are there any among you who profess to see God in great things, but cannot perceive Him in little ones? Remember, "not a sparrow falleth to the ground without your Father;" and that every hair on your thoughtless heads is "numbered." See the Lord in everything, no matter how trifling. You cannot turn up one lane or down another without Him. You cannot tell what dangers are warded off by His hand, or see "the horses and chariots of fire" that are round about you; but be assured of this: that "the angel of the Lord encampeth round about them that fear Him, and delivereth them." Remember "there is no king saved by the multitude of an host; a mighty man is not

delivered by much strength;" but the same Lord who watches over the lowly steps of the "Widow Indeed," must keep the high and mighty too, or they will fall to the ground. Readers! fear the Lord, and trust in Him; and then you will be ready to meet every danger. "Enter into your closets" daily, "and shut the door;" there you will always find enriching showers to fill your buckets.

POULTRY-YARD REPORT.

HAVING seen in the columns of your paper a report on a poultry-yard, I now forward you mine, which, I think, will prove as satisfactory as the one from your correspondent S. P. My stock, at the present time, consists of eight hens and two cocks, all of which are true bred Cochins-China, which were hatched last March (1852), and commenced to lay in October, since which period I have not been short of eggs. In January and February I had ten hens, as the scale drawn out below will show.

Having spoken of my stock, I will now say what they are fed on. There is a box filled with a mixture of the following ingredients:—viz., barley, oats, wheat, buck-wheat, hemp-seed, maize, and peas, which is always at their command. How I came to know of this, is having seen it advertised in your columns, by a man named Smith, of the Old Kent Road, as a capital mixture for poultry, which it is without any mistake.

1853.	Number of Hens.	Number of Eggs.	Chickens		The Quantity of Corn consumed per Month.	The cost per Month.
			Hatched.	Died.		
January ..	10	110	30	27	2 bushels, at 4s.	£ 8 0
February .	10	139	15	16	1½ bush., at 4s., 7 lbs. of grits	0 7 4
March	8	109	27	12	2½ bush., at 4s., 3½ lbs. of grits	0 10 8
April	8	111	14	0	2 bush., at 4s., 3½ lbs. of grits	0 8 8
TOTAL ..	..	469	86	55	8 bushs. corn and 14 lbs. grits	£1 14 8

I have two hens now laying, after having brought up two broods of chickens this year, and two now setting for the second time.—A. Z.

[We wish that many of our readers, who keep a record of their poultry proceedings, would send us similar reports.—Ed. C. G.]

THE COTTAGE GARDENER'S PONY.

(Continued from page 50.)

I HAVE been greatly edified by Abdel-Kader's letter on the management of Arabian horses, which appeared lately in the "Household Words." In all essential points I think he corroborates what I have advanced: the Oriental white barley nearly answers to our oats.

"During the great heats the Arabs give their horses drink only every other day. In the summer, the autumn, and the winter they give an armful of straw (in spring, he had already observed, they get grass), but the groundwork of their diet is barley." The Arabs say "If we had not seen that horses are foaled by horses, we should have said barley produces them." They say, "Look for a large one, and buy him: barley will make him go." They say, "Give barley, and overwork."

Again, "Know that the master of a horse gives but little barley, successively increasing his ration by small quantities; and then diminishing it a trifle, if he leaves any, and continuing to supply it at that rate. The best time to give barley is in the evening."

Abdel-Kader is a very Wilderspin among young horses. "In his first year they begin to bridle him and tie him up; in his second year they ride him a mile; then two; then a league. When he is turned eighteen months, they are not afraid of fatiguing him. When he enters his third year, they cease to ride him, and allow him to develop himself, and to rest, and get fat. Then, if he does not suit you, sell him." But Abdel-Kader has no cottage-garden, or allotment farm;

and, as his horse is entirely used for riding, he vehemently protests against the noble animal doing any servile work. He takes high ground, and, altogether, you had better *not* read the following sentence to Caleb, or you will never hear the last of it.

My father was accustomed to say, "No blessing upon our country since we have changed our coursers into beasts of burden and tillage. Has not Allah made the horse for the race, the ox for the plough, and the camel for the transport of merchandise? There is nothing gained by changing the ways of Allah."

So much for the Arabian horses. To return to our own "faithful but humble steed," as Sir Robert Peel once styled his pony.

Do what we may, these articles will take on themselves somewhat of the nature of the eccentric little brute, the subject of them. We do not proceed with the even methodical pace of the regular old hack. Starting off, it may be, with the very steadiest resolves, at a fair round trot; anon, "our trot becomes a gallop soon, in spite of curb or rein," and we get carried along, like Gilpin, farther than we intended. But no matter: by and by we have time to breathe ourselves at a leisurely foot's pace, the pace after all in which the pony most excels; the multifarious vocations of our pony require from his faithful but humble historian sundry digressions from well-beaten roads into the bye-ways and green lanes of rural oeconomies; and just now I am going to stand by and see "pony" attended to after an excursion.

First, he must have his feet well washed out, and picked clean of all bits of gravel, &c., his legs and the under part of his body very quickly rubbed dry, his ears, if cold, well chafed with the hand till the circulation is restored. This done, he must be put into the stable, a little clean straw shaken under him, and a small feed of corn administered. All this will not take more than a quarter of an hour or so. Caleb may now get his own dinner with an easy conscience, or he may throw a few buckets of water over the conveyance before the dirt dries upon it; he may clean his harness; attend to his cucumbers and melons; he may milk his cows; he may do anything, he has an hour or two's law before he need go near the pony again. By this time, rest, food, and warmth, will have recruited the pony. The glow first set up by chafing the ears and rubbing the legs dry, will have gradually extended itself over the whole skin; greatly in aid of Mr. Caleb's exertions when he commences in earnest the work of rubbing down. Now if this had been set about at first the labour would have been much greater, because of the want of any assistance from the reaction in the skin itself; the process would have taken more time, and would have been an annoyance to the poor animal, who wants to be quiet awhile, and is ready for his corn, if he be good for anything. Again, if you have got him rubbed dry at once, before reaction is established, ten to one but this will shew itself afterwards by the breaking-out of a profuse sweat, just when you would wish to leave the stable, everything finished to your satisfaction!

But, if nothing whatever is done at the horse at first when he comes in, there is danger of his getting a chill; the blood may forsake the surface, and, in vulgar parlance, be "thrown in" upon some important organ, as the lungs for instance; and, if no care is taken to get the legs dry forthwith, you may be visited by that constant associate of idle grooms and miry roads called "grease in the heels." You can always see the *extremities made dry* and attended to forthwith; but it is really impossible for Caleb Balderstone, with his many vocations, always to find time to rub a horse *completely* dry the instant he comes home; he may have to wait hours to be fully attended to; and there is a great deal in habit in these matters. The healthy, natural tone of the skin should never be sacrificed by hot clothing, close stables, &c. It is greatly assisted by plenty of good corn. A horse in good keep gets dry in half the time it takes to dry a half-starved animal.

We were looking at pony's feet just now. There are, as it were, two different types or styles of foot, even amongst ponies. One round, broad, and rather flat, like the ox's hoof; the other more oval-shaped, narrowed, and hollower, like the foot of a mule. The former sort is natural to flat, clayey soils, the ploughed fields, and where the roads are

level but heavy, the work uniform, and the speed even and moderate. The latter best withstands the severe concussions occasioned by going nimbly over hard, stony, hilly country. The general conformation often goes with the foot. "*Ex pede Herculem*" they used to say; Hercules being the Latin name of a horse. Since the days of Xenophon and of Virgil, the foot has been considered of the very greatest importance. The round-footed horse has often a capacious, round chest, capable of furnishing plenty of good blood to a rather gross body, and thick, almost clumsy limbs. Now, a chest of this kind has not much power of being distended beyond a certain limit, and, accordingly, the animal, though capable of great ordinary exertion, is rather put about when called upon for extraordinary efforts. But the oval foot is accompanied, not seldom, by a narrower but very deep chest, a high chine, and a slighter and more sinewy form. This oval chest is capable, relatively to its size, of greater dilation, when needed, than the round; and, altogether, the animal is better adapted to make great temporary efforts, whether of increased speed, or in springing up a hill; though the other will take a heavier load, and get through a vast deal of work at a fair, even pace.

This narrow, hollowed foot is liable to become contracted, and is much benefited by the cool grass, or by an occasional stopping with cow-dung when altogether in the stable. But the broad foot is very apt to get too moist, and the fleshy central part, called the frog, will sometimes inflame, smell badly, and so get what is called thrush. It may be necessary here to apply a pledget of tow, with tar, at night, removing it in the morning. There has an excellent method of shoeing been lately introduced, which consists in securing the shoe well at the toe, and only fixing the nails on the outside of the foot. This enables the sole to contract and expand almost as freely as if the animal were not shod at all: it is a great preventive of lameness. If the pony is expected to do much towards his living by jobbing about in the cart, the shoes should be provided with very small heels or calkins; otherwise not.

The round, punchy form, above alluded to, is the best where there is much farm-work, and a drag of a phaeton to try at; but such a horse is rather liable to become broken-winded, being much given to stuffing himself with hay, and he will not always stand corn very well. The food, however, and especially the water, should be strictly attended to; and the subject habituated gradually to an aristocratic allowance of oats, and weaned of his vulgar fondness for hay. This kind is often dun, or brown-coloured, or roan. The dark chesnut, or iron-grey, has more frequently a narrow foot, and is of the form better adapted for riding, drawing a light gig, and for occasional farm-work.

A domesticated animal, be the same horse, cow, fowl, or pig, must have a certain amount of food merely to enable it to exist: we can only expect it to pay for the keeping by rendering us anything notable in the shape of muscular power, muscular flesh, fat, butter, milk, eggs, &c., in return for an additional quantity and more excellent quality of food judiciously given. "Feed well," was the Roman farmer's motto. "Feed well."

P.S. I hope to be enabled to give your readers some calculations of the expense of keeping a stout pony, or small horse and chaise, upon strictly utilitarian principles, in a future article, if I may be allowed so to do.—VIBGYOR.

[Permission is given.—ED. C. G.]

DISEASED DIGESTIVE ORGANS IN A DORKING HEN.

WHICH ARE BEST LAYERS?

A FORTNIGHT ago, a fine Dorking hen (two years old), who had the run of a park, and every advantage as to diet and care, was brought to me by the woman who had charge of the lot with an immensely distended crop; she had observed it increasing for the last three days, but the hen was otherwise in good health, *eating well and laying*, though she could scarcely move, as her crop actually touched the ground when she was standing up. Having read in your journal of the good effects of cleaning the crop out in obstinate cases of *indigestion*, and fancying this might be one, I had an incision

made, when a quart of black liquid (smelling most offensively) immediately poured out, and a FEW kernels of barley; the hen did not appear to suffer, and made no resistance. The crop, being thoroughly cleaned out, was carefully sown up, and on being offered a LITTLE toast and ale she eat it greedily. I hoped I had effected a cure; but the next morning my surprise was great to find her crop as large as ever; it was again opened, and with the same result, excepting the barley, which, as she had had none, of course did not appear; in fact, she had had but one tablespoonful of toast and ale, and *no water*. She continued in this state till last Monday, when I was advised to give her water with rue in it, and leave it before her; this I did; she drank a great quantity, and the next morning I found her dead.

[This case would have been an interesting case for examination. I should imagine that there was an obstruction in some part of the digestive canal, most probably between the crop and the gizzard, but, in the absence of a *post mortem*, it is impossible to speak decidedly. Hens often lay one or two days after becoming ill, those eggs being laid of which the yolks were matured before the attack. The malady is not likely to recur among the other fowls.—W. B. TEGETMEIR, *Tottenham*.]

Seeing your courteous answers to the many who apply for information, induces me to offer my slight experience on the often-mooted question as to "which breed of fowls are the best layers?" I have, for the last three years, kept seven different breeds, which are—1, Cochín-China; 2, Spanish; 3, Dorkings; 4, Silver-Pencilled Hamburgs; 5, Gold-Laced Sebright Bantams; 6, White Bantams; and, 7, some half-bred Dorkings. Some of these I have not had quite so long, but quite time enough to judge fairly of them, having had none less than eighteen months, and I have no hesitation in saying, that the Spanish lay both the finest and the greatest number of eggs, and a glance at my poultry book, which I shall be happy to show, will prove it. The fowls have all different walks, and, as nearly as possible, the same advantages, all having daily liberty; if any, the Cochín-China and Sebright Bantams are the most favoured, as they are close to the house.—S. H.

SEA WEEDS.—No. 1.

THE study of the Marine *Algae*, or, as they are commonly called, Sea Weeds, is so full of interest, that those who enjoy it themselves can scarcely refrain from endeavouring to spread the pleasure which they feel by imparting it to others. It is delightful to be at the sea-side, to watch wave after wave rushing in upon the shore, or breaking, in showers of spray, on some time-worn rock or pebbly beach. It is equally enjoyable, on a calm and sunny day, to feel that the tide is stealing in upon you almost imperceptibly, while the blue sky is reflected in the mighty mirror. But how is the pleasure increased, and the interest deepened, to those who are searching for the beautiful Ocean plants! How do they watch each coming wave to see what treasures it may cast at their feet, or look, with earnest gaze, into the little clear, rocky pools, fringed all round with delicate *Algae*, the little crabs lurking in their shade; the curious star-fish spreading out their numerous feelers; or the red sea-anemone studding the stones and expanding in the sunshine, or suddenly closing up as something touches it. And then, too, the limpets, glued as it were to the rocks, and the periwinkles, and the sudden dart of a shrimp, or the elegant movements of a company of the delicate little sand-eels. Oh! even as I write, how I long for the sea-shore.

Many and many an hour have I passed upon it, looking so earnestly for weeds that time and weariness were almost forgotten; and on one occasion I found, on looking up, that I was completely surrounded, and had to walk through the water, to the delight of an old sea-captain, who, having a scarcity of occupation; used to edify himself, or rather indulge his curiosity, by watching other people's proceedings through a telescope. I was very glad to be on the dry sand once more, though I was afraid I should have had to go back again; for a little white poodle had followed me from my lodgings, and at first seemed too timid to follow me through the water, but at last she ventured, and poor little Fan and her friend were quite safe.

There is much of disappointment, as well as of pleasure, in searching for *Algae*. Marine pleasures, as well as earthly ones, are subject to vicissitudes. The wind, perhaps, is not favourable; or the season may not be a good one; or the weed-gatherer may not be there at the right time. Like all other things, it requires patience and perseverance. But then, these, generally speaking, bring their reward with them; and great is the pleasure when a weed, never seen before, is found, and the prize is carried home to be floated and dried, to be placed in the herbarium at some future time, while duplicate pieces are carefully wrapped up in oiled-silk, or gutta percha cloth, to delight some inland friend, through the medium of the post; or to refresh some invalid naturalist, whose languid eye lights-up with pleasure as he surveys weed after weed, and feels that he owes them to the kindness of a friend who has not forgotten to share his pleasures with one who is unable to procure them for himself. Oh! who but those that have felt it, can tell how refreshing it is to be thus kindly remembered. It is as refreshing to the spirit as sunshine to the body. The law of kindness, is, indeed, a pleasant thing—a cordial to the sinking spirits, a cup of consolation to the weary. Are we practising it?

Dr. Harvey says, that the name *Algae* is now limited by botanists to that large group or natural class of Cryptogamia, or flowerless plants, which form the principal and characteristic vegetation of the waters. The sea, in no climate, from the polar circle to the equator, is altogether free from *Algae*, though they abound on some shores much more than on others. "Some are so minute as to be wholly invisible, except in masses, to the naked eye, and require the highest powers of our microscopes to ascertain their form or structure. Others, growing in the depths of the great Pacific Ocean, have stems which exceed in length (though not in diameter) the trunks of the tallest forest trees; and others have leaves that rival in expansion those of the Palm."

Of the "constant colours" of Sea Weeds, I shall speak in another paper; merely warning the young botanist not to depend too much on colour alone, as from circumstances it may vary. Again I borrow from Dr. Harvey—" *Laurencia pinnatifida* is particularly variable in this respect. When this species grows near low-water mark it is of a fine, deep, purple-red, a little higher up it is dull purple-brown, higher still, a pale brownish-red, and at last, near high-water mark, it is often yellowish or greenish. *Chondrus crispus*, too, when found in shallow water, exposed to strong sunlight, is often of a bright herbaceous green; and *Ceramium rubrum* passes through every shade of red and yellow, and at last degenerates into a dirty white before it ceases to grow." Many Sea Weeds change colour very much after being taken out of water, especially some of the *Sporochnus* tribe, which are bright olive when first taken from the sea, but soon become soft, and change to a verdigris-green, spoiling the colour of other delicate *Algae* with which they may be mixed.

I hope that my readers will become interested in Sea Weeds, if they have not already done so, and that the examination of those wonderful works of God will be found elevating to the mind, and lead to the contemplation of Him who created the sea and the things that are therein.—"This great and wide sea!"—S. B.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

CALCEOLARIAS AND MIMULUS (*W. A. L.*).—The seedling Calceolarias, now (20th May) in the fourth leaf, will not flower in time to make any show this season; but Mimulus seedlings, in the same state of forwardness, will be in bloom by the middle of July, with good management, and be very useful through the autumn.

PRUNING BANKSIAN ROSES (*M. M.*).—They are pruned as soon as they are out of flower, and not at any other time, unless they are young or too strong, and make long, watery shoots towards the end of the summer, when all such ought to be stopped or cut out entirely, according to the room for training them.

BEGONIA FUCHSIOIDES (*Ibid.*).—This is a most troublesome customer at the best; here and there we see a passable plant of it, but, generally speaking, very few gardeners can do much good with it after the first season. It requires little water in winter, but will take as much as a geranium all through the summer.

JAPAN LILIES (*Ibid.*).—We leave them out all the winter, and they improve wonderfully. We never gave them any protection; but in very severe frost they had better be covered with tan or ashes.

WALLFLOWERS (*Ibid.*).—Yes; we plant slips of them in the shade; and now, or very soon after, is the best time.

CALISTEGIA (*R. F. S.*).—If the *Calistegia pubescens*, from China, is the one meant, it is out of its way altogether to have it in a pot, and it never pays for pot-culture for an amateur. It is hardier than the Common Daisy, and in a good border it flowers abundantly; but it is a very troublesome plant, increasing so fast by the roots, and every morsel of them grows. It does not like to be in the full sun. It seems to do best growing wild, like our own White Convolvulus in the hedges, to which plant it is very closely related, only it is not half so pretty, unless you could get the single form of it, which is the prettiest hardy plant among the Bindweeds.

AUTUMN-BEARING RASPBERRIES (*Nemo*).—Your raspberry plants are quite right. Very young nursery plants will not fruit, or, at least, should not be allowed to carry fruit the same season they were planted. Cut down the old stems, and take good care of the sucker shoots now coming, and they will fruit abundantly. The *Lophospermum scandens* is well suited to climb up a pillar during the summer; it will cling for support by twisting the leaf stalk round anything small enough for the embrace, say wire or string. Use the alluvial soil by all means.

PLANTS FOR SQUARE ORANGE BOXES (*Perseverance*).—You have twenty-four boxes, two feet square, and you want twenty-four kinds of plants in them to decorate the lawn, but twenty-four pigs, with one ear a piece, would look quite as well. When you "decorate" a lawn with square or round boxes, you must have at least two-thirds of the number in match pairs—two boxes with pink *Hydrangeas*, and two boxes with deep blue ones would look well, two of deep purple *Fuchsias*, and two of the best white, two with yellow shrubby old plants of *Calceolarias*, two with the blue African Lily (*Agapanthus*), two horse-shoe scarlet *Geraniums* six feet in diameter, two *Tom Thumbs* of the same size, two of *Lucia Rosea Geranium*, or any of that breed, and a few more that way, as the Duke of Buccleugh has them near Edinburgh, and the Duke of Devonshire near London. We never saw a bed of scarlet *Geraniums* mixed with *Eschscholtzia*, and we doubt the good effect of the mixture; but as your employer wishes "particularly" to try one, he has a right to insist on having as many of them as he chooses. The best way would have been to sow the yellow broadcast about the middle of April, and to plant out the scarlets at one foot apart, or more according to size.

FLOWER GARDEN PLAN (*A Sussex Parson*).—A is by far the best plan of the two, and would not be improved either by additions from B, or by joining the two entrance heds at each side; but your scarlets, bright pinks, or light purples, ought to be in pairs in said entrance beds; that is, in plan A, 2 and 3 ought to be with the same plant; 7 and 12 ditto; 10 and 15, and 19, 20, the same. In B, the centre 30 is out of all proportion too small for the rest of the beds. For ten or twelve best climbers for the rectory—*Clematis montana*, *Sieboldii*, and *cerulea grandiflora*, a *Passion flower*, a *Wistaria sinensis*, a tree potato, or *Solanum jasminoides*, a little Ivy on the north, with a *Virginia creeper* mixed with it, two or three *Evergreen climbing Roses*, as *Felicite Perpetuelle*, *Myrianthes*, *Princess Maria*, with *Cobea*, *Lophospermum*, *Maurandias*, and *Eceremocarpus*, for summer climbers, are all very good. A list of herbaceous plants, and of the very best of them, can be gathered from our last few numbers, and we shall add to them from time to time. We have no writers on fish ponds or steers, but some of our readers may be able to give some useful hints on this subject, and for such hints we should be much obliged.

GUIDE FOR ARRANGING COLOURS IN BEDS.—*A Sussex Parson* says:—"I observe you mention in THE COTTAGE GARDENER, as a good plan for arranging the colours in a garden, the advantage of using wafers. I have found paper of different colours, cut to the shape of the beds, having the several colours cut to each hed, of great assistance to me. Indeed, I think it gives, as nearly as possible, the effect the garden will have when planted."

EDGING FOR BEDS (*Ibid.*).—"My beds are edged with wood two inches wide, painted white, and sanded; at a little distance you would scarcely distinguish it from stone edging." When wood is thus sanded, a thin coat of paint over the sand improves the appearance, and renders the semblance to stone more perfect and durable.

BEES DESERTING THEIR HIVE (*J. H.*).—"Early last year, I made a purchase of two stocks of bees (to replace some losses), they were in old straw hives, and remarkably heavy and strong, so much so, that I fully expected from them unusually early swarms, but May passed over, and June, and though they hung out of both hives in enormous clusters for several weeks, one only threw off a swarm, and that in July, and it (fortunately as it turned out, no doubt) housed itself in an old hive full of comb, the bees in which had died through want of feeding. I gave it up for lost, being so late a swarm; but mark the sequel. A fortnight ago, I discovered that the hive which had not swarmed, and which I imagined to be more than usually strong on that account, was not working, and on further examination I found it empty! as far as bees were concerned, about half-a-dozen only of dead bees were scattered about, and, strange to stay, it was full of combs, and two or three of them which I cut out were full of honey! On the other hand, the hive that did swarm, and the late swarm, I deemed so weak, are both strong and active, and have had no feeding, other than the deserted sweets before named, and which I placed within reach,—a piece of attention which was evidently appreciated." The queen in your deserted hive died from old age, or some accident, most probably the former, and at a time when there was neither eggs nor brood wherewith to make another, and the bees on that account deserted the hive, and joined one of your other stocks. Your stock that swarmed last year has certainly a young queen, from which you may expect a swarm as early as the season will allow, if from the swarm, or

not, is doubtful, unless you can ascertain that its parent swarmed the year before.

DISEASES SHANGHAE (*W. C. S.*).—The hen forwarded for examination died from long-standing inflammation of the egg-passage, an exceedingly frequent disease in birds fed up for exhibition, or sale. The complaint is more fully alluded to in a paper in a recent number, but this case confirmed, in an especial manner, my views as to the reversed action of the egg-passage, as I found an imperfect egg (which had received an investing membrane in the middle of the egg-tube) escaping from its open funnel-shaped upper extremity.—*W. B. TRGETMEIER*.

VINE SCALE (*C. C.*).—The insects you enclosed to us are the Vine Scale (*Coccus vitis*). It is totally different from the Red Spider. See drawings of each at page 260 and page 5 of *The Cottage Gardeners' Dictionary*. The subject of fertilizing the queen bee is quite undetermined.

RHUBARB WINE (*T. G. E.*).—Full answers to your queries are in our 161st number, being page 71 of our seventh volume.

SHANGHAE PULLETS EGGS (*A Cockney Amateur*).—Pullets eggs of every breed usually produce chickens weaker than do the eggs of hens. The chickens partly formed, but dead in the shell, shew that the eggs were chilled at the time when formation was arrested. Shanghai eggs do not require more time for incubating than other fowls eggs. We cannot tell where you can obtain the seed of *Anemone præcox*.

ANEMONE SOWING (*Dromore*).—If you have a cool greenhouse, sow them early in March, in boxes. If you have not such shelter, sow, during early April, in the open ground. We suppose you are enquiring about the kind usually grown in borders.

WORM CASTS (*W. C.*).—These can only be prevented by frequent applications of lime water.

VINE-LEAVES TURNING YELLOW (*T. H. W.*).—The leaves look as if they had been scorched. Give air earlier in the morning, and have the air in the house less damp.

FLORIST IN A SMALL WAY (*A Would-be-Florist*).—We cannot advise you; but we will say, that no one could wish another a worse fate than to be a small florist, even if he had a full knowledge of his business, which you say you have not. A small florist cannot live, unless he works also as a jobbing gardener.

PANSY CULTURE (*An Inquirer*).—Look at our 117th number.

HEATING A SPAN-ROOFED VINERY AND GREENHOUSE, PITS, &c. (*Co. Cork*).—We would gladly comply with your request, but a description is often sufficient, and plans are expensive to engrave. You will find most of what you want on heating pits, &c., by Mr. Fish, in a late number. If not, be so good as state your particular wishes on the matter, and they will be attended to. You will see an article on a span-roofed greenhouse and vinery page 122, in which you may find something to suit you. In addition, let us say that your contemplated span-roofed house, 40 feet long by 14 feet wide, will be a most useful one, divided in the middle, and intended half for vines, and half for plants. As a sort of index to your proposed proceedings, the following items may act as an outline:—House to stand north and south; a door in the middle of each end; back walls three feet high; upright glass sashes, three feet in height; height of ridge, eleven or twelve feet. Then, though one house is to be vines, yet, as you will be sure to furnish it with plants at times, it will be wise policy to arrange both divisions alike. Have a shelf all round, except at the doors, from eighteen inches to two feet in width; the heating pipes underneath that shelf; two four-inch pipes for greenhouse, and three-inch for vinery; then a pathway three feet in width; and, in the centre, a platform or stage as suits your fancy.

SCURF ON SHANGHAE COCK'S COMB (*S. J. IVells*).—If the scurf is white, it is what has been called White Comb, and curable by rubbing it for a few days, every second day, with an ointment made of Cocoa Nut Oil and Turmeric. With regard to your previous question, you will see what Mr. Tegetmeier wishes at p. 150.

BOLTON GREY FOWLS (*Edwin*).—These are only pencilled Hamburgs by another name.

QUARTER OF AN ACRE (*A. B., Liverpool*).—It is quite impossible to answer your questions. The produce of it will not keep pigs, for they require other food than garden refuse. You must get some practical man on the spot to advise you. To ask us "what would be the gross income from it," without a single fact on which to found a judgment, is like the problem "If the deck of a ship is 100 feet long, and its mast 80 feet, what is the name of the Captain?" We shall be obliged by your information about poultry; and if you ask us a plain question as to any crop, or crops, we will answer it.

SHOW OF ROSES (*Turquoise*).—Let your gardener go to the Botanic Society's Show, in Regent's Park, on June 8th.

NAMES OF PLANTS (*W. X. W.*).—One is *Ornithogalum coarctatum*, we think, and the other, the common double Orange Wallflower. (*T. Roberts*).—2. *Epigaea repens*. 4. *Polygalachamædrys*. 5. *Vaccinium myrsinites*. Send us fresh specimens of the others. (*E. S.*).—The common Grey Poplar, *Populus canescens*. (*Quercus*).—*Adoxa Muschatellina*, or Tuberous-rooted Moschatell. It belongs to Oetandria Tetragynia of the Linnæan System, and to the Natural Order of Saxifragæ. Do you not remember the lines

Adoxa loves the greenwood shade;

There, waving through the verdant glade,

Her scented seed she strews.

(*R. M. E.*).—The weed Swine's Cress, *Coronopus Ruelii*. (*W. X. W.*).—Yours is *Fuchsia corymbiflora*.

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WEEKLY CALENDAR.

M D	W D	JUNE 9—15, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
9	Th	Pale Prominent; willows.	29.570 — 29.518	61—51	S.W.	1.48	46	12	10 44	3	1 7	160
10	F	Cream-spot Tiger; woods.	29.548 — 29.539	59—42	N.W.	18	45	13	11 23	4	0 56	161
11	S	ST. BARNABAS.	29.598 — 29.490	57—40	W.	01	45	14	11 53	5	0 44	162
12	SUN	3 SUNDAY AFTER TRINITY.	29.738 — 29.589	61—42	N.W.	02	45	14	morn.	6	0 31	163
13	M	Marbled Brown; oaks.	29.719 — 29.476	65—48	W.	28	44	15	0 17	7	0 19	164
14	Tu	Bcaut. Yellow Underwing.	29.374 — 29.214	67—46	W.	13	44	16	0 37	8	0 6	165
15	W	Bird-wing; fir trees.	29.570 — 29.477	67—44	W.	16	44	16	0 54	9	bef. 6	166

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 72.4° and 49.5° respectively. The greatest heat, 90°, occurred on the 15th in 1852; and the lowest cold, 33°, on the 10th in 1838. During the period 110 days were fine, and on 72 rain fell.

THE DEATH-WATCH.

This is so called

“Because, like a watch, it always cries click:
Then woe be to those in the house who are sick;
For, sure as a gun, they will give up the ghost,
If the maggot cries click, when it scratches the post.”

So wrote, satirically, Dean Swift, in the reign of Queen Anne, in ridicule of those, who, a century and more before, agreed with Grose, that “the clicking of a *Death-watch* is an omen of the death of some one in the house wherein it is heard.” Now, either the *Death-watch* has lost its cunning, or else every one beneath the roof-tree where this is written has had a charmed life for some years past. The *Death-watch* may be heard in it every year, and almost in every room; and it may be started off into ticking, or clicking, any hour of any day during the milder months of the year, by merely tapping gently against the wainscoting with the head of a pin.

It is very easy to comprehend how the superstition arose. In the studied silence of a sick chamber, when the watchful relative even subdues her breathing for fear of disturbing the fragile slumber of the invalid; and at that still period of the night when every noise of waking man is hushed, and when the nerves are morbidly alive, and listening for even a change of tone in the breath of the patient—then to hear the measured click of the *Death-watch* is painful even now, and must have been still more so in days when ignorance and superstition brooded over our population. We have heard it in such anxious hours, but, it never lead us to anticipate having upon our desk, on satin paper, in small well-tutored penmanship, and grammar unobjectionable, such a sentence as we now read—“I am in no spirits for writing, for my poor sister continues in the same precarious state, and as I sat by her bed side last night the *Death-watch* was painfully loud.” In the year of the Diffusion of Useful Knowledge, 1853, we never expected to read such a confession; but so it is; and we will endeavour to effect for our correspondent, and for any other reader similarly enervated, that relief, and earn that reward which Sir Thomas Browne says the man would merit, “who could eradicate this error from the minds of people, for he would

save from many a cold sweat the meticulous heads of nurses and grandmothers.”

We will not rest satisfied with telling our correspondent (M. R.) to adopt Dean Swift's cure—

“A kettle of scalding hot-water injected,
Infallibly cures the timber affected;
The omcn is broken, the danger is over,
The insect will die, and the sick will recover;”

but will give an account, as well as a drawing, of the pygmy beetle, and then leave the conclusion to be drawn by M. R.'s own good sense.



This little beetle, being only two-and-a-half lines long, is shown in the above drawing of its natural size, as well as magnified. It is usually called *Anobium tessellatum*; its horns, or antennae, are red, having their three last joints longer than the others, and clubbed. The whole body is brown, but the breast and wing-covers are spotted, and covered with an ash-coloured down; the wing-covers are also slightly streaked; and the legs are brown like the body. When spring is far advanced, say Kirby and Spence, these insects commence their ticking (but only when there is a profound silence in an apartment, and every one is still). It is only a call to each other, to which if no answer be returned, the animal repeats it in another place. It is thus produced. Raising itself upon its hind legs, with the body somewhat inclined, it beats its head with great force and agility upon the plane of position; and its strokes are so powerful as to make a considerable impression if they fall upon any substance softer than wood. The general number of distinct strokes in succession is from seven to nine or eleven. They follow each other quickly, and are repeated at uncertain intervals. In old houses, where these insects abound, they may be heard in warm weather during the whole day. The noise exactly resembles that produced by tapping moderately with the nail upon the table; and when familiarized, the insect will answer very readily the tap of the nail.

The constant dropping of water is said to wear away the hardest stone in time; and if a public writer urges a theory, or any project, constantly before his readers, he may rely on gaining a large share of converts. Truth is not so easily enforced, however; but persevere in proclaiming it, and it, too, will make an impression, and force its way to the mind, no matter how unpleasant it may be. Some of the writers for *THE COTTAGE GARDENER* have maintained, and set forth for years, that the great summer exhibitions of the Horticultural and Botanical Societies were doing incalculable injury to gardening and to the nursery trade, notwithstanding the great stimulus they gave to the proper growth of certain plants, and to the introduction of new ones.

Trade felt the effects of these exhibitions, because no plants were sought for by the public except they were, or could be made, suitable for the May, June, or July shows; and those who relied on the lists of plants that were annually published as being seen at Chiswick, or at the Regent's Park, or had won prizes there, and bought accordingly, soon found out that they had flowers in their greenhouses and stoves only in the summer months, when flowers, and especially house flowers, were least useful, unless they could be grown so as to run the chance of a prize medal. It was also discovered, that if a new competitor entered the field, the first thing he had to do was to solicit the favour of obtaining “a young man” from one of the chief

places which supplied the exhibition tables. The "young man" had the highest possible recommendation; he knew how to grow plants for exhibitions, and he proved the fact the very first time but one that he tried for a prize. But when the Council of the Horticultural Society determined on offering prizes for autumn-flowering plants, and winter-flowering, and forced plants and vegetables, there were neither young nor old gardeners in a condition to compete against the foreigner, and Mr. Solomon, of Covent Garden. The good old rule of having *forced Asparagus* on Lord Mayor's day, and *forced Potatoes* for the first dinner of the new year, is now departed from, and the time and space of the gardener are occupied with the exhibition plants instead. We have no *Moss Roses*, and rarely a bunch of *Violets*, for Christmas day, as of old; forcing against nature is thought too vulgar; and those who looked for *Lettuce* and other *salad plants* in winter, belong to the old school, and must fall back on old-fashioned country gardeners to supply their tables and china vases while the frost is in the ground. Good collections of stove and greenhouse plants, to flower all the round of the seasons, have given place to a minimum of the commonest and easiest plants to keep and to bring up in a "mass of bloom" in May, June, or July, under the auspices of the award committees. One *Ixora*, or a fine *Medinilla*, from the stove, with nineteen of common Australian and Cape plants from the greenhouse, now constitute a "collection of stove and greenhouse plants," worthy of "a large gold medal."

Who, then, would incur the expence of a general collection, or take the trouble to nurse plants that are in any way difficult to manage? Even the vitiated taste that would confine nature "in stays," and train all kinds of plants into globes or balloons, have so thoroughly depreciated the ideas of the "leaders," that if a man offers to depart from the stereotype notion, and to bring the shape of a terrace-garden plant,—standard or pyramidal,—to Chiswick, he is told, in sarcastic terms, they are inadmissible; that they are "trimmed into a thing like nothing so much as a fly-flapper, or the broom of a Bavarian hawker!!"

So, it is high time for our best flower gardeners to give up standards, whether they be *Roses*, *Myrtles*, *Pomegranates*, *Bays*, *Laurels*, or what not, and to fill up conservatories, terrace gardens, avenue walks, and all the regularly laid out figures in and about the garden with globes in stays! Let them give no heed to the earnest strains of Mr. Beaton in favour of standard plants, for be it known that our fellow-labourer, Mr. Appleby, has had the temerity to "show" standards, not "trimmed plants," but grafted standards of the beautiful *Deutzia gracilis*, at the last exhibition at Chiswick; and the censor meets him at the garden gate with "Whose and what are these execrable plants with which thou darest to thwart my ways?"

All this deserves pardon, however, because the dawn of a better state of things appears in the next paragraph.

"The sameness, too, of the plants comprehended in general collections, is destroying the interest which would

otherwise be taken in such remarkable examples of skill. For what do the spectators say? If you point out any points of excellence, the answer is, "Oh! very fine certainly; but these are only stove and greenhouse plants, and we always find them here. They come year after year, and I really do not see any difference between one show and another." It cannot be denied that this is too true. *Pimeleas*, *Boronias*, *Eriostemons*, *Allamandas*, and *Polygalas*, form the staple, to which are added some *Azaleas*, an *Epacris* perhaps, a few *Heaths*, and an *Aphelexis* or two. But we submit that these do not constitute such a collection of stove and greenhouse plants as interests the public. Many belong to other parts of the exhibition, some are hackneyed, and of no more importance than a "Swiss giantess" at a fair; and the whole contribute in the least possible degree to that variety which is the charm of an exhibition. It will be seen that five collections contained *Pimelea spectabilis*, four *Boronia pinnata*, six an *Aphelexis*, and eight or nine *Epacris grandiflora* or *miniata*. That this requires total alteration admits of no doubt, and we wonder that men so sharp-witted as the exhibitors should not see how such a want of variety ruins the interest which their great horticultural skill would otherwise command."

Thus it is, that the constant dropping of truth and fair reasoning in these pages about the effects of the system maintained by the funds of the Horticultural Society have made an impression, and thus the sad truth is admitted; but we, on the contrary, do not at all "wonder that men, so sharp-witted as the exhibitors," should not have found out the commonest and least expensive plants, and those that are the most easily managed, when we see in the prize lists tempting gold and silver medals are so freely awarded to such plants by the same hands and heads as now deplore "the sameness" produced by their own short-sighted policy in admitting the same plants, and the minimum of distinct species, month after month, and year by year, to compete for the prizes.

It is quite true, that "none can judge more correctly of the true value and import of such exhibitions than English gentlemen;" hence the cause why their names and numbers, as subscribers, become less and less every year; and also the reason why we began so early to point out the damage done to the nursery trade, and to the gardener, by the way pursued in the name of the Horticultural Society.

"That this requires total alteration, admits of no doubt;" but the alteration itself will be most difficult, if not even dangerous, to the existence of the Society. There is a wide-spread discontent at the harsh manner in which everything and every person who come in contact with this Society are treated. If a gentleman, like Mr. Rucker, thinks he has done enough for one branch of gardening, and is satisfied to rest on his laurels for the future, he must endure and put up with the annual annoyance of being told before the world that his plants were not missed, or that the Society can do without him. If, on the other hand, one is bold enough, like Mr. Appleby, to introduce any system, however prized by "our high-born dames," he is met with sneers and nicknames; but that system, too, is as prejudicial to the cause and strength of the Society, as that about awards to collections of stove and greenhouse plants, which are of small interest to any one but those who get the prizes for them.

A little more courteous and civil treatment might redeem part of the lost influence at Chiswick; but any sudden changes in the manner of exhibiting collections of plants there will assuredly be a dangerous step on the part of the Society, whose machinery is said to be much out of working order.

With respect to *Orchidaceous plants*, and *Roses in pots*, they seem to improve still more every year. The *Azaleas*, though splendid in the mass, are now stationary, and require mere novelty and fresh blood into the mixture to keep up the interest in them much longer. Their new seedlings are not worth looking at, as compared to what a few liberal prizes for them could draw out. The great *Pelargoniums* are as monotonous as a bed of Daisies, and almost as common. They are deficient in whites, purples, and rose-scarlets; orange-scarlets are in sufficient numbers already. The *Fancy Pelargoniums* go on improving slowly, but at a sure pace. The large and small collections of *mixed plants* have been stationary these six years last past. The plants are only decreasing in numbers as the monstrous sizes increase. This department of the exhibitions has reached that point for which the fat pigs and bullocks have been condemned at the Baker Street Bazaar, and must needs be remodelled, but upon what basis who can say, when we see this once powerful Society obliged to bow down to less than half-a-dozen of the principal exhibitors, as instanced in the recent collision between them and the Society, in the matter of lowering the prizes for orchidaceous plants? The Society were confessedly in a dilemma, and, at last, were compelled to retrace their steps by a compromise that is not honourable to either party.

We believe there is a crisis in the state of the Society, and we advise them to weigh all things dispassionately before they come to any final decision about dealing with the difficulties. Let them not trust to *our* warnings, nor believe *our* assertions; but we ask them to inquire into these allegations. B. L.

BEING unable to recognize the sufficiency of either the natural deviations from one original type, or the subsequent effects of domestication and acclimatization to account for the present distinct families of our domestic fowls, we are induced to ask the question whether these different families might not have been individually comprehended in the original species? Why might not the several properties and peculiarities of the Game fowl, the Polish, the Malay, the Shanghai, and the Bantam, have had form and existence in the earliest ages of the world?

It is obvious, that the reasons which would influence an opinion on this point must be rather of a negative than of a positive character. Thus, our first thought carries us to the Mosaic account of the Creation, and the narrative of the animals preserved in the Ark. Here, at any rate, we have nothing adverse to the supposition; the male and female of each kind cannot, we think, be limited to a single species, but may fairly

be extended to the sub-divisions of that class, whether we call them families or races—but, might not the mention of the fowls taken in "*by sevens*," (*i. e.*, as commentators understand it, seven couples), confer a degree of positive evidence? Whether this, however, be so or not, it will hardly be contended that the idea of species, including families, even in the beginning of all things, is in any way opposed to the sacred records of the Creation.

If reasoning by analogy, we now turn our attention to some of the more extensive species of the animal kingdom, the case of the Antelope tribe might, perhaps, be taken as representing a somewhat similar state to that of the domestic fowl in the light we are now regarding it. Recent accounts of the vast number of these animals inhabiting the districts of Southern Africa, detail distinctive features of the same character and importance in the eyes of the naturalist as are witnessed in the different families of fowls. We see in the Antelopes horns varying like combs; hair and fur of as many different textures and colours as feathers now present to us; and the same with respect to both form and size. The denizens of a Caffrarian plain, universally recognized as distinct species, do not, in many instances, present so great a contrast as the Shanghai and Bantam, or the Game and the Silk fowl. But there is no hesitation in assigning these quadrupeds to distinct primitive parents; what greater difficulty, then, attends the hypothesis, that fowls might have had their parentage equally extensive? presuming, be it remembered, that adequate reasons may appear wanting on behalf of the opinion that would assign them all to the narrow limits of a single pair. The doubts in our mind may be solved by the adoption of this theory, which seems in every way reconcileable to Biblical history, and countenanced by the observation of the naturalist in other sections of the animal kingdom.

The question of the probability of our domestic fowls owing their descent to the Bengal Jungle fowl (*Gallus Sonneratii*), or any other of the wild *Galli*, which we proposed as a second subject for consideration, has been admirably treated in an article on "Poultry Literature," in No. 88 of the *Quarterly Review*.

Now, supposing that such a pedigree were authentic, might it not be expected that some traces of the various steps by which it was gradually brought about would be apparent in the native countries of the assumed original stock; but this link is not merely wanting, but we have strong testimony to the contrary. Mr. Blyth, Curator to the Museum of the Asiatic Society, at Calcutta, tells us, that "it is remarkable that the domestic poultry of India do not approximate to the wild race in any respect more closely than the common fowls of Europe; and I have sought in vain for traces of intermixture of Jungle fowl blood in districts where the species abound in a state of nature."

This, certainly, must be regarded as adverse to the Bengal Jungle fowl's claim, for it is of this bird that Mr. Blyth is speaking; but he also says, in reference to the *Gallus Sonneratii*, which another naturalist,

M. Sundevall, has regarded as the primitive ancestor, of whom they were both in quest, "M. Sundevall might well have sought in vain for traces of the wild *Gallus Sonneratii*," i.e., in the native breeds of the domestic fowls of India. This latter bird, *G. Sonneratii*, we should observe, occupies the southern portion of the Indian peninsula, while the Bengal Jungle fowl extends northwards as far as the Himalayan range, and eastward to Arracan, and the territories of the Burmese empire; neither, however, seem likely to afford us any clue that may tend to unravel the difficulties of gallinaceous genealogy. Mr. Blyth, we should observe, leans to the opinion that the Bengal bird might have been this much-desired ancestor; but his own reference to the utter absence of all traces of the degrees by which this process has been effected is, at least, in strong opposition to his own theory.

All our inquiries, in short, with respect to the present wild Galli of Borneo, Sumatra, and the other islands of the Indian Archipelago, fail to assist our search for a bird at all likely to have been the progenitor of our domestic fowls. We find neither evidence of any state of transition from the jungle to the yard, nor any aptitude for domestication. The Jungle fowls, indeed, breed readily in confinement, but the term "*domesticated*" cannot be applied to any of pure blood that we have yet seen. In habits, character, and form, the interval between them and the domestic fowl is very great.

Pheasants have been brought to the same state of tameness as these Jungle fowls; but it is hardly necessary to remark on the wide difference between this and domestication, where they become, as it were, the willing docile companions of man.

Mr. Dixon has justly observed, that one primary object of the institution of the Zoological Gardens was the hope of introducing various new birds as profitable inmates of our poultry-yards; and, without doubt, all available means that a liberal outlay, constant observation, and long experience, could suggest, were employed for that purpose; but yet, in no case, has the desired end been realised.

It has been said, however, that although efforts for the domestication of such species of the animal kingdom as were likely to prove serviceable to us, have failed in our hands, they were, in former times, rewarded with complete success; and that the camel, the horse, the ox, the sheep, the ass, the goat, and the fowl, and such other animals as the earliest records make mention of in a state of domestication, were reduced to that condition solely by human means. It certainly appears to us that this presumption is not in accordance with the circumstances of mankind in those days; and the following remarks of the writer in the *Quarterly Review* before referred to, tend to the same conclusion:—"These metamorphoses must have been effected at a period when our juvenile race had plenty of other things to occupy them; it must have been to the dwellers in ever-shifting tents, the scourers of deserts, the explorers of untrodden tracts of interminable pasture;—it must

have been to these busy pioneers of human progress that we are indebted for the inestimable gift of domestic birds and animals, if *not* to the Divine forethought and bounty. *We*, in these later days, can make neither the shy Bustard, nor the gentle Guan, available in our poultry-yards; *we* cannot harness the Zebra, tempting as is his pattern, to our Lord Mayor's coach, nor induce the Jackal to point and set, so as to become Cumming Gordon's, instead of Tao's, provider. But these toiling, way-worn patriarchs could train for us the horse, the ass, the camel, the dog, the fowl. By what process? and from what wild stock?"

The Camel, so far as is yet known, has never been found in a wild state. It may, therefore, have been created for the special purpose of subservience to man, and so on with the other instances, where Infinite wisdom and power foresaw and provided all that was requisite for human life. The Gallus, or Galli, therefore—for here it matters not whether one or more were originally called into existence, to whom we may ascribe the paternity of the domestic fowl—may have been created in the same state in which we now see it, viz., a state of domestication. If this be so, and certainly the line of reasoning is not at variance with the sole authority of those early days, the difficulties of searching out the wild original parent are self-imposed, and we are again taught the infinite mercy and loving-kindness of our Creator.

To Mr. Dixon must the credit be assigned of directing attention to this subject, and ably was his task fulfilled. To show, however, that he had the sanction of high authority for the expression of opinions so adverse to those generally entertained, I may quote the following passage from Bewick, which seems to denote the existence of some misgivings, at least, on the part of that great naturalist, on what was then, as now, the currently received idea of the necessity of seeking a common ancestor for the different families of the domestic fowl among the present denizens of Asiatic jungles.

"The Cock, in his present state of domestication, differs so widely from his supposed wild original, as to render it a difficult matter to trace him back to his primitive stock; however, it is generally agreed, that he is to be found in a state of nature in the forests of India, and in most of the islands of the Indian seas." The expression of difficulty in assigning the primitive ancestor, and the term, "*it is generally agreed*," lead us to infer, that the evidence was not, by any means, conclusive to his own mind.

Sir Charles Lyall, in his "*Principles of Geology*," chapter 35, has well observed that, "if we are to infer that some one of the wild Grasses has been transformed into the common wheat; and that some animal of the genus *canis*, still unreclaimed, has been metamorphosed into the dog, merely because we cannot find the domestic dog, or the cultivated wheat, in a state of nature, we may be next called upon to make similar admissions in regard to the camel, for it seems very doubtful whether any race of this species of quadruped is now wild."

We are perfectly aware, while referring to the above passage, that, within the last few years, attempts have been made to demonstrate the descent of the cultivated wheat of the present day from the wild Sicilian grass "*Ægilops ovata*;" but, in common with many others, this derivation presents to our mind greater difficulties than the evidence in support of the metamorphosis can possibly account for.

We conclude, with the expression of what appears most probable to our own mind in respect of the subjects of these remarks. The general descent of the present varieties of the domestic fowl from any one original bird, does not seem a necessary deduction either from the records of creation, or the observation of naturalists; while the contrary opinion not only removes obstructions from the path of enquiry, but is in perfect concurrence with the same authorities. Again, a wild original parent does not appear either probable or necessary to explain the course of descent, and a bird, or birds, originally destined for immediate domestication, would prove a more probable conjecture.

W. W. W.

EARLY-HATCHED *Shanghai chickens* are very scarce—we mean those hatched in February and early in March. Some were sold at Mr. Stevens's, a few days since, at from £2 10s. to £3 10s. per couple.

In reply to enquiries which have been made as to the precise species of *scale insect*, selected by the Entomological Society, as the subject of the next prize essay, which has been announced under the name of the muscle scale, it may be stated, that it is the *Coccus conchiformis*, the species which is extremely abundant in the neighbourhood of London, and probably also all over the kingdom, which, in the full grown state of the female, appears on the shoots and stems of the Apple in the shape of a minute muscle shell. We may add, that it is required that the prize essay should also contain the most approved practicable remedies for its destruction.

GLEANINGS.

DISHONESTY is one of the most ingenious of the vices; and it would be difficult to name any property high in man's esteem, from a diamond down to a hen's egg, which has not been the subject of fraud and deception. This was brought forcibly to our notice by the following extracts from two of our contemporaries; and we quote them for the purpose of warning guano buyers to have that analyzed before purchasing, and egg-buyers to be sure of the honesty of the vendor before they take steps for becoming the proprietors of a brood of Shanghaes.

ADULTERATION OF GUANO.—It appears that the adulteration of guano is largely carried on in Liverpool. The principal materials used, are damaged Roman cements and gypsum, liquid-manure from horse refuse being poured over the mixture to impart a smell similar to that of orthodox guano. It is stated that one bag of

guano is by this process mysteriously multiplied into twelve or fourteen!—*Durham Advertiser*.

A NEW DODGE.—A tradesman residing within one hundred miles circuit of Nottingham Exchange pump, lately bought a dozen of Cochín-China eggs, for which he paid 17s. 6d., and so delighted was he with his purchase, that he insisted that he and his fair spouse should taste the delicious but expensive morsels in a couple to breakfast. They were boiled, but when placed on the table, to his great astonishment and chagrin, the beautiful tint that before rendered them so inviting, had changed to common white! On examining the remaining ten, they were found to be nothing more than small, and not very fresh, Irish eggs, which had been tinted to the requisite "Cochín-China" shade by being steeped in a solution of raw umber.—*Nottingham Guardian*.

COVENT GARDEN.

WE have often heard it remarked, that one can live cheaper in the country than in London. Of this we have had little opportunity of judging; but, if all articles of consumption in the country bear the same ratio to those of London as garden produce does, we have this week had ample demonstration of the fact. We had occasion, within the last few days, to visit Cambridge, and, as a matter of course, found our way to the Market place. It was market-day, and every opportunity was afforded for forming a comparison between the prices there and those of Covent Garden. Our attention was attracted to quantities of very fine *Rhubarb*, which was being sold at 4d. per bundle. We had rarely seen it of such fine quality produced in country markets before, and, on inquiry, we discovered that this had been brought by rail all the way from London, and, notwithstanding the distance and expence of carriage there, it was being sold at less price than it can be obtained for in Covent Garden, or any of the London markets. Such quality as we refer to cannot be had here under 6d. per bundle.

In Covent Garden the price of very good *Asparagus* is 3s. 6d. a bundle of 100. Our readers may judge our surprise on finding, at Cambridge, the same quality sold at 8d. Almost every article was to be had at the same low prices. *Brocoli*, of excellent quality, was sold at from 1s. to 2s. per dozen; while, in Covent Garden, it makes as much as 3s. to 4s. But while there is an abundant supply of these, the more common vegetables, at such reasonable rates, we found, on inquiry, that the more choice and rare productions of horticultural skill are not to be so easily obtained.

In Covent Garden, the supply of all sorts of vegetables increases, and there is a brisk demand. There is also an excellent display of *Peaches* and *Nectarines*, of good quality, at 24s. per dozen. They consist principally of *Grosse Mignonne*, *Bellegarde*, and *Royal George* *Peaches*; and of *Elruge* and *Violette Hative* *Nectarines*. *Forced Grapes* are also plentiful, consisting chiefly of *Black Hamburgs*, which make from 5s. to 10s. per pound.

Strawberries are more plentiful, and realise from 6d. to 1s. per ounce.

The *Flowers* become more common, and are not quite so choice as they were a month or two ago, when they were confined to forced and stove plants; but still they are equally attractive, and the demand for bouquets is very brisk. H.

BULBS.

HIPPEASTRUM.

(Continued from page 7.)

THE universal beauty of the flowers of this section of the *Amaryllids* has been admired in this country by all who knew them, since the first day that *Amaryllis regina* flowered in England, and that was on the Queen's birthday in 1728, hence the name, "the Queen's *Amaryllis*." And from the day that Linnæus instituted the genus *Amaryllis*, to supersede Tournefort's *Lilio-nareissus* (*Hortus Cliffortiensis*, 1737), until the last fifteen or twenty years, the members of the genus, and the sections which the family runs into, have been a puzzle-peg to botanists themselves; no wonder, therefore, that gardeners have not yet been able to grasp the slippery points by which alone the natural limits between the different sections can be satisfactorily made out. Dr. Herbert was the first who distinguished this genus from the mass of allied bulbs referred to it by the illustrious Swede, in a letter published in the "Transactions of the Horticultural Society," where he followed out Linnæus to the letter in calling it *Amaryllis*, not knowing then that *Amaryllis* was founded on the *Belladonna*. "It was the exquisite blending of pink and white in that flower, as in the female complexion, that suggested the common name (*Belladonna*) in Italy, and to these lovely tints Linnæus referred when he assigned to it the name of a beautiful woman," the *Amaryllis* of Virgil. As soon as Dr. Herbert discovered the mistake, however, and knowing that *Hippeasters* and *Belladonnas* could not be covered by one name, he goes on to say—"I was not then aware that Linnæus had given the name *Amaryllis* to *Belladonna*, with a playful reason assigned; but as soon as I learnt it, I felt, besides the general law of priority, that the *jeu d'esprit* of a distinguished man ought not to be superseded, and that no continental botanist would submit to the change. I therefore restored the name *Amaryllis* to *Belladonna*, and gave that of *Hippeastrum*, or Equestrian Star, to this genus, following up the idea of Linnæus when he named one of the original species *Equestre*." Such is the true history and the reason for *Amaryllis* and *Hippeastrum*.

If I live out this present month of June, I shall see, at least, fifteen thousand ladies dressed in their very best, and very many of them will have "the exquisite blending" in greater perfection than either *Amaryllis* or *Belladonna*; but you may travel the world over and not meet with a fair one whose complexion will remind you of a single member of the Equestrian group, except, perhaps, *brevislorum*, a Brazilian species, sent by Tweedie to the Glasgow Botanic Garden, where it flowered, while almost every one of the original species, at least, presents the star peculiar to the order; why, then, call them *Amaryllis*, in the face of all law and reason, as some of our best growers of them do to this day? Besides, there are fifteen private marks by which a *Hippeaster* is known from an *Amaryllis*, the most conspicuous part of which is the fore-shortening of the front of the tube at the bottom of the flower,—abbreviated in front, as they call it. In all the neighbouring bulbs, there is a ring between the tube, however short the tube may be, and

the upper part of the flower called the limb; this ring is the rudiment of the membrane so conspicuous in the inside of *Paneratium*-like flowers; and in every one of the *Hippeasters* in which it is manifest, it is reduced to a crescent, the front portion of it being lost by the shortening of that part of the tube; the middle of the crescent, at the back of the flower, is the highest part of it, and the two ends incline down to the front of the flower; the stamens rise from the inside of the crescent, and they follow its course, so that their insertion is in gradations from back to front, and, keeping this in mind, one could tell the flower of a *Hippeaster* from any other flower in the order, if he had only one inch of it bearing the crescent and the insertion of the stamens; or, if the crescent is absent, the graduated insertion alone would determine the flower. These are the only answers I think necessary to a hundred questions as to what is the difference between an *Amaryllis* and a *Hippeaster*.

From the days of Philip Miller to those of Robert Sweet, or, say, until within the last twenty years, the custom was to pot these bulbs when they were at rest, or immediately before they were set to grow; some growers shaking them out of the soil as soon as they went to rest, and others keeping them in the pots all the time, stacked away under the stages, or some warm, dry place during the rest time. Now, however, it is the universal practice to keep the bulbs in pots at all times, and to repot them just after they have done flowering, or, if they do not show for flower, to have them potted when the leaves are nearly full-grown. I have myself used, or seen used, every place and compost that has been recommended for this family since 1820; and I have made as many experiments on them as any one, killed more of them than most people would believe, and also brought more new ones into the world than would be convenient to number; and the end of all is this, that from the sowing of the seed until the future *Hippeaster* dies of old age, there is nothing so good for it as pure loam only, without any mixture whatever, except a little sand for seedlings and very young bulbs at first, but when they come to a flowering size, this loam cannot be too strong for them, but it should not be of a nature to bind hard after much watering. In all cases, the pots ought to be upright ones, not wide mouthed, till you come to specimen plants, and Nos. 16 and 12 pots, with one large old bulb in the centre, and four or six side ones all growing, and flowering, and going to rest together. A most beautiful cross *Hippeaster* flowered with a friend of mine since my last Bulb paper; it was in a 16's pot, with offset bulbs, and it had twenty-six flowers open the same week. This pot does not cost him more than one-half the care and labour, throughout the year, than is requisite to get a good pot of *Mignonette* in flower at the same time. Indeed, *Croesus* themselves are more difficult to manage and to keep than *Hippeasters*, except half-a-dozen sorts of border *Croesus*. No stove is needed to grow a thousand of them to the utmost perfection, as they will grow a flower through the summer in a warm frame, and may be kept quite dry from October to March or April; and many of them are hardy greenhouse plants, and will flower out in the border, and have done so for years; and the whole of them can be so managed as to begin their growth at any time during the whole winter, so as to have them in flower at any particular time. Besides, if one of them is healthy at the time of potting, and the whole bulb is covered with the right soil, no more is needed for the next seven years certain, but to water it, and to watch the times of growth and rest.

The worst kind of treatment would be to use peat and leaf mould, with light loam, for a compost; to leave one-half of the bulb uncovered, to give too much heat

when growth begins, and to keep the bulbs, while at rest, where the heat and moisture of a stove prevails. They would be much safer in a dry, warm cellar, but they like as much heat while they are at rest as when they are growing, only to be perfectly dry all the time. But I shall write a letter about them, as if to a friend who knew nothing about them, but who wished very much to grow some if he knew how; and I shall go on now to describe some of the best wild kinds, and what may occur to me about them—then, between the whole, if I leave a stone unturned, I am free for cross-questioning, providing always that the questions are short.

HIPPEASTRUM VITTATUM.—This is the oldest and the best of all the greenhouse species, and it is so hardy that it will live out-of-doors, grow, flower, and seed very freely in front of a house, or wall, in the neighbourhood of London, with only a covering of coal ashes in winter. Dr. Herbert had it so for many years in succession, at Mitcham, in Surrey; and yet it will stand a good forcing heat in the spring, and even live for a few years in the stove altogether, but is very liable to mishaps when subjected to such high excitement. It is a native of temperate regions in South Brazil. The flowers are white, with a double stripe of dull red in the centre of each of the six divisions of the flower. There are from four to nine flowers on a scape, and it rises from twenty to thirty inches, and sometimes to a yard in length when the bulb is very strong. It is the mother of all the Hippeasters that have white stripes on a red or orange ground—a class which is called *Johnsonii*, from a person of that name, who raised the first cross in Lancashire, in 1810, between *vittata* and *regium*, or *regince*.

HIPPEASTRUM VITTATUM MAJOR.—A very great improvement on the last, much finer and larger flowers, with better leaves; altogether, a very fine thing. It was first named and described by Dr. Lindley, among his earliest contributions to botany, and he has never described a finer flower since, except

HIPPEASTRUM HARRISONIANUM.—A third form of *Vittatum*, with a little more green at the bottom of the tube. As soon as the *major* variety appeared in cultivation, the old *Vittatum* was soon lost; *major* is from a lower level, and is not nearly so hardy as the original. The hardihood of *Harrisonianum* has not been well tested in England, but being a great favourite in the gardens about Lima, we may believe it to be only a greenhouse plant. It was also named by Dr. Lindley, I believe, in the "Botanical Register." It is necessary to be thus particular, as our present race of gardeners have confounded the three together, and believe in the existence of one form of the species, and that form is now lost, but it was the best for crossing to get hardier offspring. It would be worth introducing it again, and it could be met with, probably, in the diamond mine districts.

HIPPEASTRUM PSITTACINUM, a fine, open spreading flower, feathered with green up from the bottom to near the edges, where it is margined with bright red; a most beautiful, and a very scarce, flower now; several less better marked crosses having usurped the name. It is nearly or quite as hardy as the old *Vittatum*, and does not produce more than two flowers on a scape. It is a common plant, growing in strong red clay, on the slopes of the Organ Mountains, next to the head of the Bay of Rio de Janeiro, in Brazil.

HIPPEASTRUM ORGANENSE.—This is a hardy variety of the *H. Aulicum*, growing up to the summit of the Organ Mountains, and, therefore, must be much hardier than the last. It produces only two flowers on a scape. It is a better flower than the old *Aulicum*, but not quite so rich as the third form called *Aulicum platypetalum*. Mr. Gardener sent it home, and I had it from a gentleman at Newcastle, and I consider it the most valuable

of the *Aulicum* breed on account of its hardihood. The other two varieties of *Aulicum* grow lower down, near the coast about Rio, and require stove heat; all of them have a green eye, with a fringed or bearded ring, or crescent. Dr. Lindley, writing about them in 1826, (*Bot. Reg.*) says, "the whole of these varieties are, in our judgment, mere sports of nature, in all essential points analagous to the variations of a bed of tulips;" and all that we have learned about them since goes to strengthen this opinion. These are the only greenhouse *Hippeasters* from a state of nature that are worth growing; but seedlings from them, by the pollen of any of the stove species, are proved to be nearly as hardy as themselves; such is the case with seedlings of *Rhododendron arboreum*, by a hardier pollen; and such, also, with all the stove *Crinum*s, which breed with the *longiflorum* of the Cape; hence their value as breeders.

HIPPEASTRUM REGIUM, the pollen parent of *Johnsonii*, is one of the next hardiest; and the next after it is a prolific breed, called

H. BULBULOSUM, which grows in the middle latitudes of Brazil, where it sports naturally into an endless variety, but all agreeing in one point—producing dormant or blind offsets round the bulb, which refuse to vegetate under cultivation. *Rutilum*, *fulgidum*, and *ignescens*, are the three best of the *Bulbulosum* breed, presenting the same orange-scarlet tints as those beautiful *Pelargoniums* called *Basilisk*, *Governor-General*, and the like. *Crocatum* belongs to this breed. *Reticulatum* is one of the very best stove red species; the original species is lost now more than twenty years, and its natural place of growth is not recorded, but there are many crosses from it in the country, and they are of a better and higher colour than the parent, but not so conspicuously netted or barred on the petals, and not one of them, as far as I know, possesses the clear white bottom of the wild species; there is a natural variety of it, with a white band along the middle of the leaf, and a very poor, pale red coloured flower.

HIPPEASTRUM SOLANDRIFLORUM is a tender stove bulb, remarkably large and handsome, and of quite a different form from all the rest. The colour is creamy-white, faintly striped with red, the flower from eight to ten inches long, and with a long narrow tube, as in *Lilium longiflorum*. There are four or five natural forms of *Solandriflorum*, and all of them had names given them, but they are of little use now, as the true species are not much cultivated for sale. The best of them is one called *Conspicuum*, a native of Cayenne, requiring strong heat; the flower is ten inches long, and differs from the species principally in having a crimson stain along the midribs of the outer segments (sepals), with the bottom of the tube shaded with purplish-red; a most beautiful flower, which, when crossed with *Psittacinum*, gave all the streaks, feathering, and shades belonging to the genus. This breed, however, seldom made good garden plants until the third or fourth generation; the first cross almost always looks shabby, with thin, flimsy flowers, but beautifully marked, hence the reason why gardeners did not go on improving them as they did the scarlet ones, which are now ten times better than the best of the originals, while of the striped and speckled class we have hardly one, except what has been done with *Johnsonii*, which, however, is not of this breed. The way to get into the true strain of *Solandriflorum* is to use the pollen of *Conspicuum* or *Striatum*, the two best of the breed, on the stigma of *Vittatum major*, or *Harrisonii*; the offspring of this cross is a better white than *Solandriflorum*, and the red stripes are more defined than in either parent, but the flowers are thin, from the extreme cross. The first cross with the Shanghai fowl will very likely exhibit the same fault; the degree of inferiority will be according to the qualifications of the other side of the cross, on the

supposition that fowls run as flowers do. But let the fowl breeder take a lesson from the gardener, and persevere with the strain, using the best of his crosses with each other, and also with the true China breed, until he is satisfied with something of a stamped character. The best crosses of these white flowers are to be again and again crossed with *Vittatum major*, and among themselves, and then flowers of size, substance, and of better shapes, will appear at every future cross, but always with a greater proportion of worthless seedlings than in the breeding among the *aulicum*, *reticulatum*, and *bulbosum* strains. Some of the best varieties of the *Solandraeflorum* are natives of Cayenne and Guiana, growing in the low level plains in a rich kind of strong blue clay, which gives a vigour and luxuriance not to be surpassed in the world. This is the reason why they delight in such unmixed soil in cultivation, and strong bulbs of them may have a dose of rich liquid-manure once a week, from March to September, if they are in active growth.

D. BEATON.

ERIOSTEMON.

This beautiful family of New Holland shrubs is very desirable on account of the abundance of bloom they produce in the spring and early summer months. Though a large, well-grown specimen looks most splendid, yet one advantage of these plants is, that they bloom very freely in a small state, such as when two or three years old from the cutting. The plants being well known, I may merely add that they are nearly allied to the *Boronia* division of Rueworts, and that those who grow *Boronias* well will find little difficulty with *Eriostemons*. I shall shortly glance at several practical points in their treatment.

Species, or Varieties.—All are desirable where there is room, and between some of them there is but little difference. *Buxifolium* and *scabrum* are the most dwarf and most compact in their mode of growth. *Intermedium*, as the name implies, is stronger-growing; and *salicifolium* and *cuspidatum* are more robust, and want more room. *Myoporoides* is weak-growing, and whitish in colour. The general treatment of these and others is similar, only that the smaller kinds may have rather more peat than is hereafter directed, and the stronger-growing a little more loam.

Propagation.—Select the points of shoots getting firm, or any side-shoot, three inches in length, from April to the beginning of June; insert them in silver sand, over a little sandy peat, in a pot three parts filled with drainage; water, and, when dry, place a bell-glass over them, and insert the pot in a little bottom heat, say 70°, while the atmosphere ranges from 50° to 60°; and shade from bright sun. Pot off early, if struck, but if not, keep them in the cutting pots the first winter, and pot into small pots early in spring, giving them from 5° to 10° more heat than the greenhouse. Pot again by May, and harden off towards autumn, by air and exposure to full light, to enable the plant to stand more cold in winter.

Choosing Plants in a Nursery.—Let these be bushy, compact plants, and possessing one leading shoot, as these plants look far best when trained in the cone fashion, with one stake in the centre. A plant one foot in height, possessing these qualities, and not stunted in the pot, is worth, ten times over, a thin, stunted plant, that has been waiting some time for a market, although four times the size.

Potting.—When in a young state, this may be done twice or thrice from spring to autumn; when larger, once, shortly after they have done flowering. When arrived at their full size, surface dressings will suffice for several years. In all cases of potting it is necessary to do it so

early that the roots will be getting to the sides of the pot by the middle of September. It will seldom be advisable, therefore, to pot after July, unless when transferring from the cutting repository. Always, after potting, keep the plants closer, warmer, and in a more moist atmosphere, by syringing the leaves, &c., until growth is again fully proceeding. If a large shift should be given in April, or May, be careful, in watering, that the new soil is not saturated before the roots begin to work freely in it. What I would call a small shift is from three-eighths to half-an-inch all round between the ball and the side of the pot. A large shift might range from one to two inches, but beginners had better try the first. Need I mention that before performing this operation the soil in the pot should have been well soaked, and allowed time to drain thoroughly. Almost as easily perform the operation of wetting the inside of a cabbage leaf, by pouring water on its outer surface, as get the soil of a plant moist that has been potted dry. The same principle holds in planting from pots out-of-doors in summer. Let the pot be well drained, with a little moss, and then a little of the roughest of the compost above the drainage. Pack the soil then, neither wet nor dry, firmly round the ball, and leave sufficient room for water.

Soil.—Good heath soil should form the chief part; the more full of decomposed fibre the better. It should be broken by the hand, and some of the very finer excluded. For large plants and shifts a few pieces may be as large as walnuts, but the great proportion much smaller, and mixed with the finer substance. For small plants the pieces should be smaller, about as large as marrowfat peas. If this heath or peat soil is pretty good, then four parts so prepared, one part of pounded bricks and charcoal, with the dust excluded, and one part of fibry loam, with a little silver sand incorporated with all, will grow the tribe admirably.

Pruning and Training.—The last has already been alluded to. In forming the plant, considerable attention must be given to the former. Shoots must be stopped, in order to get more to furnish a dense bush. The leader, if inclined to go on too fast, may also be stopped; but as soon as several shoots break, one must be again selected for that purpose. In forming the plant at first, and then pruning it after blooming, the supply of a sufficiency of young stubby shoots all over the plants must be the principal aim, so as to secure a uniform mass of bloom.

Position, Temperature, and General Management.—The treatment recommended for the *Epacris* tribe will, in many cases, apply, so that the plant may either be managed wholly in the greenhouse, or partly out of it. Supposing that you obtained now a nice young plant to grow on, or that you had one just finished blooming, and received what little stopping and pruning it required, the proper treatment would, in either case, be identical. Sprinkle the plant over the foliage morning and evening; keep it in a close atmosphere, and in a temperature of from 50° to 60° at night, and 10° more, at least, during the day. During this period, when breaking its buds, shade a little from bright sunshine, but soon confine that merely to the middle of the day. At this season, nothing is better than a cold pit, as, in general, the regulating of air will enable you to have the requisite conditions of temperature and moisture at will. As soon as growth is proceeding freely, admit more air and full sunlight to harden it. Its maturation, and free-flowering afterwards, are its cause and effect. To accomplish this, attend duly to water at the roots, but discontinue syringing early in autumn. In fine, bright days, as soon as the plants will stand it by degrees, let them be fully exposed to the sun; but in wet weather, while enjoying plenty of air, let them be protected by the glass. Early in October, remove them

to an airy greenhouse where, during the winter, they may have an average night temperature of 45° . As the advancing power of the sun, in early spring, swells the incipient flower-buds, they will relish sprinklings of tepid water after breakfast-time. The common treatment of the greenhouse will then suit them. When in bloom, it will be preserved longer by keeping them a little shaded, but the colour will not be near so bright. As that fades, a close place in the greenhouse or the cold pit, as detailed above, will be their position. A little weak manure-water may be given when in bloom and making their growth, but clear soft water at other times. As in the case of many other plants from the same regions, success greatly depends, first, on early fresh growth, so that, secondly, that growth is well matured before the dark, muggy days of autumn set in.

R. FISII.

THE FERNS.

MANY of the readers of THE COTTAGE GARDENER cultivate Ferns, and several correspondents have made, at different times, application for some information on their culture. As I have had, for several years, a large collection under my care, and have been tolerably successful, both in propagating them, and afterwards growing them, I trust my remarks, the result of experience, will be found useful to growers, and interesting to all our readers.

Though this class of plants has no floral charms, yet they possess an elegant beauty peculiarly their own. The leaves, or, as they are called, their *fronds*, have, in most cases, a light feathery appearance that is exceedingly pleasing, and the green of every shade on these plants is remarkably fresh and tender. Some of them, as the Gold and Silver Ferns, are not to be despised even for that quality florists so much admire—colour. The Golden Fern (*Gymnogramma chrysophylla*) has the under sides of its leaves of a fine bright orange, or golden colour, which always strikes the spectator with unexpected pleasure; and the Silver Fern (*Gymnogramma tartarica*) is equally beautiful, or even more so, from the clear pure white of its spores, or bundles of seed, on the under side of the leaf. There is, indeed, such an elaborate and minute finish in this interesting tribe of plants, displaying such wondrous attention and power by the Divine Architect of all things, that the mind of any human being must be in a deplorable state that does not feel pleasurable and grateful emotions on viewing these, comparatively speaking, humble adornments of our happy world—for “it is a happy world, after all.” Many a bosky dell—many an exposed rock—would lose its attractive charms without these charming plants.

Then their geographical distribution is most remarkable. They clothe the Alpine rocks of the temperate portions of the globe, and ornament the thickets and jungles of the torrid zone. They flourish in wet bogs, and grow plentifully on dry hedge-banks. They grow in the hottest, and almost the coldest, portions of the globe, clothing what, in their absence, would be the dreariest waste.

Every country yet discovered has its Ferns. In some they attain a considerable magnitude, approaching almost to the size of timber trees. So large, indeed, are they, especially in New Zealand, as to acquire the name of *Tree Ferns*; whilst, in other instances, they are so small, that a single plant does not occupy above an inch in space even when fully grown.

This large distribution over the world brings them within the power of every one possessing the smallest garden, a short distance from large, smoky towns, to cultivate them; and I am happy to find a large number of

admirers of plants are growing, and commencing to grow, them in various parts of the civilised world. The cultivator of Ferns shows that the love of plants is strong within him; for, as may be truly observed, they are not so showy and attractive as many other plants, their beauty being of a different order; but there is this advantage about them, that they may be grown where few other plants will thrive, only taking care to plant suitable species for any peculiar position. This information I shall particularly endeavour to impart through this essay.

I scarcely need mention, that a Fern, whose natural home is in shady, damp places, would not exist if planted on a fully-exposed, dry situation; neither would such species as are found in the clefts of the rugged rocks succeed if planted in a close, damp place. It is the want of a due attention to the various habitats where Ferns grow wild that many species die when attempted to be grown on quite different situations and soils.

It is a remarkable fact, that there are no Ferns from warm countries that will thrive well in the open air of this country, even in summer; whilst many of our British Ferns will grow prodigiously in our hothouses. There is one Fern, *Asplenium marinum*, found on rocks on the shores of this country, that will not grow well inland, unless it is grown, at least, in a greenhouse, and in the stove it flourishes with a luxuriousness never seen in its most favourable native locality. I have seen fronds of this fine Fern, in the stove conservatory, at Sion House, fully two feet long, whilst in the open air it seldom exceeds more than six inches. One more instance may be given in the *Adiantum capillus veneris*. This species may be seen at most of the Metropolitan exhibitions, in 10-inch pots, a complete bush, more than a foot in diameter, and nearly as high; whilst in its wild state it seldom exceeds four or five inches across, and two or three inches high. It is a knowledge of these peculiarities that enables the cultivator to produce specimens far superior, both in size and beauty, to such as are produced naturally. These instances of complete success in cultivating these charming plants are sufficiently encouraging; and I am tempted to quote a proverb for the purpose of stimulating Fern growers, and it is this—“What one man has done another may do.”

With these preliminary remarks and observations, I will now describe the method I intend to follow in writing on Fern Culture. I shall divide them into three principal sections, namely—

- 1st. Stove Ferns: their culture, and a catalogue.
- 2nd. Greenhouse Ferns: their culture, and a catalogue.
- 3rd. Hardy Ferns: their culture, and a catalogue.

Each of these sections I shall again divide into—1st, Soil; 2nd, Potting; 3rd, General Management; and 4th, Propagation.

T. APPLEBY.

(To be continued.)

EXHIBITION IN THE ROYAL BOTANIC GARDENS, REGENT'S PARK.—MAY 25, 1853.

THE day was propitious, and a numerous company assembled to see the beauties of Flora, notwithstanding it was the Derby day at Epsom. I was glad to see such numbers, for I am no lover of races, and was happy to find that so many respectable persons, of both sexes, had the good taste to prefer a visit to these beautiful gardens to mixing in the crowd that, no doubt, hurried to that scene of dissipation—the races. The Show was above an average one; the plants and flowers had a freshness about them that betokened it was the merry month of May. New plants were scarce; yet there were two or three very interesting, especially a

variegated *Aphelandra*, from Mr. Van Houtte's, of Belgium. I understood it has not yet flowered, and have my doubts about its being an *Aphelandra* at all. Mr. Beaton has described it as being shown at Chiswick, and, therefore, I need not say any more about it. There was also a new plant, named *Dietyanthus paronia*, allied to *Ceropegia*, with curious spotted flowers, but of no great value: it is a stove climber. Also a prettily-spotted *Calceolaria*, named *Violacea*, a new species, with pale blue-lilac flowers, of a cup shape, spotted in the inside, on a yellow ground, with crimson spots. My friend, Mr. Beaton, would say it was a desirable one for cross-breeding. This was from Van Houtte's. Messrs. Henderson sent a new plant from Australia, named *Dillwynia cinnabarina*, with brown and orange pea-shaped blossoms, most abundantly produced upon the tiny plant. This is likely to prove an acquisition.

New orchids were very scarce. Messrs. Rollison sent a new *Miltonia*, named *pulchella*, a desirable addition to that beautiful genus. It is in the way of *M. spectabilis*, with the pink blotches on the lip or labellum. It is a desirable plant. *Metrodora atropurpurea* came from Pine-Apple Place. The foliage is handsome, but the flowers are small, and of a dull dark purple, growing in long spikes.

In florists' flowers, there were very few novelties worthy of notice. The best was a new *Cineraria*, named *Eva*. It had a dark disc, surrounded with pure white, tipped slightly with crimson. This is a pretty thing, and very desirable, its only fault being rather inclined to cup too much. *Azalea Symmetry* is a well-formed flower, but of a colour of which we have too many already. It is of a bright reddish colour. It is certainly the best-formed flower of that colour. Mr. Gaines had a seedling *Calceolaria*, named *Negress*, of considerable merit. It is almost black, and very thinly spotted with yellow; form very good. The seedling *Pelargoniums* though rich in colours, were not sufficiently new and striking to attract much attention; probably in June one or two of them may be improved.

The miscellaneous collections of greenhouse and stove plants were in excellent conditions. I note the following as being particularly well-bloomed, fine specimens.

Pimelea spectabilis, *7 ft. by 7 ft.; a noble plant.

Leschenaultia formosa, 3 ft. by 3 ft.; covered with its pretty scarlet flowers. *Allamanda nerifolia*, 3 ft. by 3 ft.; well-bloomed. *Hoya imperialis*, 6 ft. by 4 ft.; a noble plant, with numerous heads of bloom.

Pimelea mirabilis, 3 ft. by 3 ft.; very much like *P. decussata*.

Eriostemon nerifolium, 5 ft. by 4 ft.; a fine plant.

The *Aphelaxis* genus furnished many fine specimens, especially *A. purpurea macrantha*. There was one fine *Stephanotis floribunda*, very full of its beautiful heads of pure white sweet-scented flowers.

Gompholobium polymorphum, a finely-bloomed, neatly-trained plant, came from Mrs. Lawrence, of Ealing Park. From the same place came an enormous *Epaeris grandiflora*, 8 ft. by 9 ft.

Pimelea Hendersonii, the best of the genus. There were several fine plants well-bloomed, averaging 3 ft. by 3 ft.; one specimen was 3 ft. by 5 ft.

Boronia pinnata, a beautiful specimen, 3 ft. by 5 ft.

Bossia disticha plumosa, shown as a single specimen, was very finely bloomed, and densely grown, 5 ft. by 5 ft.

Aerophyllum venosum, well-bloomed; 3 ft. by 3 ft.

Gompholobium barbigerum, a large evergreen bush covered with large yellow flowers.

Ixora Javanica, a very noble plant, with numerous flowers; 6 ft. by 5 ft.

Tetralthea ericifolia.—There was a good specimen of this rather new plant. A learned botanist writes

me "The *Tetralthea*, from Swan River, appears to be an undescribed species, approaching in habit to *T. epilobioides* (Sleetz), and *T. hirsuta* (Lindley), but differing from both in the shortness of its peduncles, as well as in the form of its anthers, and its tetramerous flowers. From the true *T. ericifolia* it is distinguished by its downy stems and germen, as well as by the form of its leaves and other characters." The plant was well grown, and finely bloomed; 2 ft. by 2½ ft.

THE INDIAN AZALEAS were in fine condition; for a description of the best I must refer to Mr. Beaton's account of the Chiswick Shows, as they were most of them there.

CAPE HEATHS were numerous, and well-bloomed. The *Cavendish Heath*, of this fine species, there was about half-a-dozen, or more, scattered through the tents, some of them as much as 6 ft. high and 5 ft. through. I noted the following also as being very fine:—

E. elegans, 3 ft. by 3 ft. *E. ventricosa coccinea minor*, 3 ft. by 2½ ft.

E. Beaumontia, 3 ft. by 3 ft. *E. preponderis*, 3 ft. by 3 ft. *E. montabilis*, a low, spreading, dense bush, profusely bloomed, 2 ft. by 3 ft.

E. perspicua nana, 3 ft. by 2½ ft. *E. florida*, a scarce species, 3 ft. by 2 ft.

E. Bergiana, densely bloomed, 4 ft. by 4 ft. *E. tortileflora*, 3 ft. by 2½ ft.

E. suarcolens, 3 ft. by 3 ft.; this is a Heath with sweet-scented flowers. *E. tricolor Wilsonii*, a fine species. *E. vestita coccinea*, a splendid bush, 3 ft. by 3 ft. *E. vestita rosea*, a small plant, densely bloomed, 2 ft. by 2 ft.

IXORAS.—These fine stove plants were shown in a collection of four species. Though they were respectable, yet I cannot but remark that of late years the specimens of *Ixoras* have not been exhibited so fine, neither in growth nor bloom, as they used to be.

TALL CACTI.—These gorgeous flowers were shown in fine condition, and were very attractive.

ORCHIDS.—I never saw these beautifully singular plants shown in better condition, both as regards growth and bloom. There were four collections of twenty-five each; one of eighteen; one of sixteen; and four of eight each; in all 146 plants, all in flower, and not a bad plant amongst them. An orchid grower will easily conceive what a grand sight was here. I noted the following as being particularly fine—*Phalanopsis grandiflora*, with scores of its snow-white, moth-like blossoms. *Dendrobium nobile*, several large plants, 4 ft. by 4 ft. *Aerides odorata*, with thirty spikes. *A. crispum*, nine spikes. *Cattleya Mossiae*, several fine plants. *Cattleya Skinnerii*, highly-coloured, and numerous flowers; the noble *Phaius Wallichii*, with twelve spikes. *Saccolabium guttatum*, with twelve spikes. The *Trinidad Butterfly plant*, with seven blooms. The beautiful, highly-coloured *Laelia cinnabarina*, with six long spikes. *Stanhopea tigrina*, with its strange, fleshy, dark blossoms; and *Stanhopea oculata*. *Oncidiums* in great numbers, as well as the rarely-seen *Epidendrum bicornutum*, with its beautiful snow-coloured blossoms; also the beautiful and gay *Dendrobium Paxtonii*, and *D. Devonianum*. I might lengthen this list, but the above were the most remarkable for growth and bloom.

FLORISTS' FLOWERS.—These were in fine feather, fresh, and bright. The *Roses in pots* taking the first rank in point of merit. I never saw them so fine, the plants were large, and the flowers magnificent. Rich scarlet or crimson *Roses* were not numerous, *Géant des Buttailes* taking the lead, and *Paul Ricard* treading upon his heels, *Chénédolle* bringing up the rear nobly. In *Yellows*, the old *Persian* was the best in colour, and was well bloomed. *Devoniensis* had noble flowers with a yellowish tinge; many of the flowers measured five inches across. *Niphetos* was fine, but almost white from being forced. *Rose* is a colour difficult to describe; of

* The first figure denotes the height, the second the diameter of the plants.

this there were several extraordinary fine plants, the best were *Paul Perras*, *Coup d'Hebe*, *Baronne Prevost*, *Comtesse de Mole*, a variety seldom seen, *Charles Dnval*, and *Bouquet de Flore*. Whites were scarce. *Souvenir d'un ami* had white edges, with a flesh-coloured centre, and *Tagliani*, a tea-scented, beautiful Rose, was as near white as possible. *Mrs. Bosanquet* was in fine condition, and pure white. I must not forget *Adam*, a fine fawn-coloured, double, tea-scented variety. These were the best, but all were really finely-bloomed, and were the grand attraction of the day, excepting, perhaps, the Orchids.

PELARGONIUMS.—Those effective show plants were exhibited in large numbers, but excepting those shown by Mr. Turner, of Slough, were not so full of bloom as usual. The plants were well grown, and will be fine at the next show. The best includes many of the good old varieties, as the following list will show:—

SCARLET OR BRIGHT CRIMSON.—*Magnet*, *Glowworm*, *Salamander*, *Prince of Orange*, *Rosa*, and *Magnificent*.

LIGHT, WITH DARK BLOTCH.—*Rowena*, *Rosamond*, *Star*, *May Queen*, *Bertha*, *Gulielma*, and *Arethusa*.

DARK, WITH MAROON BLOTCH.—*Mohanna*, *Constance*, *Cuypp*, *Chloe*, *Pride of the Isles*, *Nonsuch*, *Forget-me-not*, *Negress*, *Conspicuum*, *Chieftain*, *Painter Improved*, *Ambassador*, *Aladdin*, *Alderman*, and *Norah*.

PURPLE, UPPER PETALS THAT COLOUR.—*Ajax*, *Alonzo*, and *Princess Royal*.

WHITE.—*Virgin Queen*, *Ellen*, *Pearl*, *Blanch*, *Mont Blanc* (No. 2), and *Camilla*.

PELARGONIUMS (the lesser or fancy varieties).—These were, generally speaking, well bloomed. The best were, *Advance* (light), *Formosissima* (dark), *Hero of Surrey* (dark), *Gipsy Queen* (dark), *Defiance* (dark), *Slavinska* (very dark), *Electra* (light), *Queen Superba* (light), *Cristine* (light), *Miss S. Sheppard* (light), *Gaiety* (light), *Richard Cobden* (light), and *John Bull* (dark).

PANSIES IN POTS were exceedingly well grown, and finely bloomed, quite equal, if not superior, to those grown in the open border. They were much and deservedly admired by the visitors.

Flower of the Day (a fine dark self, superior to the *Duke of Perth*), *Adela* (a good yellow), *British Queen*, *Marchioness of Bath* (a fine flower), *Alfred the Great*, *Sir John Cathcart*, *Marchioness of Lothian*, *Helen* (a fine white ground with light purple margin), *National*, *Mrs. Bell*, and *Sylvia*.

In **CUT PANSIES** the following were the best—*Royal Standard*, *Conqueror*, *Miss Talbot*, *Flower of the Day*, *Sovereign* (the best yellow self), *Robert Burns*, *Sambo*, *Pandora*, *Sir R. Peel*, *Queen of England*, *Kate*, and *Royal White*.

CINERARIAS.—There were several collections, but none in very fine condition; the best were *Rosy Morn*, *Rosalind*, *Mrs. Sidney Herbert*, *Amy Robsart*, and *Lady Hime Campbell*.

CALCEOLARIAS.—One good collection, from Mr. Constantine, gardener to C. Mills, Esq., Hillingdon, was grown as Calceolarias should be. I understand they were all seedlings raised by the exhibitor. *Scarlet King* (a decided acquisition), *Duke of Wellington* (a fine crimson), *Defiance* (a spotted variety), and *Mrs. C. Mills*, were the best.

TULIPS.—These gay flowers were exhibited in considerable number, and in fine condition. Mr. Turner, of Slough, sent a collection of eighty-four, and Mr. Milner, of Sudbury, another of ninety-six. I noted the following as being really good—

WHITES.—*Princess Charlotte* and *Groom*.

YELLOW AND DARK STRIPES.—*Gloria Mundi*, *Duchess of Clarence*, *Polypheumus*, *Junius Brutus*, *Charbonnier*, *Carten Leopold*, *Trafalgar*, and *Chelleston*.

DARK FEATHERED BYBLOMEN.—*Charbonnier noir*, *Diogenes*, *Globe Regan*, and *Aristides*.

ROSES.—*Ceres belleforme*, *Aglaie*, *Claudiana*, *Bion*, *Lord Colechester*, *Rose Astonishing*, *Lord Hill*, *Brilliant*, *Triomphe Royal*, and a breeder broke into colour this season.

MISCELLANEOUS.—Under this head there was exhibited a good collection of *Stove Ferns*, from Mr. Williams; and *Lycopods* from Mr. Woolley; *British Ferns*, from Mr. Smith, Regent's Park. Also an interesting collection of *Alpine Plants*, from Mr. Turner, of Holloway, most of them very well-bloomed, especially *Veronica repens*, *Saxifraga granulata pleno*, *Alyssum saxatile*, and *Ajuga reptans pleno*.

RHODODENDRONS IN POTS, from Messrs. Lane, of Berkhamsted; and Mr. Ivison, Sion House, were large, and well bloomed; gay in colours, from the darkest crimson, to white spotted with purple.

FRUIT.—The Society did not offer any prizes at this Show for fruit, consequently very little was exhibited. There were, however, some good Grapes, growing on the trees in pots; some good Cut Grapes; two Melons; one dish of fine Strawberries; one dish of Figs; and a dish of ripe Apricots, a somewhat uncommon fruit at this time of the year.

T. APPLEBY.

PLANTING OUT CROPS IN SUMMER.

WHEN is the best time to plant the various kitchen-garden crops, that, from time to time, require removal from the seed-bed to the quarters where they are expected to remain for permanent use? This is a question that has several times been asked, and is one to which anything but a general answer can be given; for, although it is customary to say, "plant out after rain," the many failures we see from so doing would seem to imply, that the advice must be acted upon with caution, or, in other words, it must be qualified to suit the circumstances of the case. We have all seen nice young broods of *Lettuces* planted out to their final quarters, and disappear within a very few hours after; and beds of *tender Annuals* have sometimes suffered a like fate, more especially if they be margined by a considerable breadth of grass, which forms a lurking place from which foraging parties of their enemies make nightly sallies, and carry away all that is most valuable. Now, this drawback amounts, in some instances, to the entire loss of a crop, or several crops in succession; nor are protective measures so effective as could be wished: it therefore becomes the enquiring mind to weigh well the benefits of planting after heavy rains, and the evils to which the system is exposed. We have been so situated, as to find it almost impossible to save our *Brussels Sprouts*, *Greens*, &c., which it is customary to plant out early in June, if we planted them out in wet weather; we, consequently, adopted the other extreme, and planted them out when the ground, as well as the weather, was very dry, and usually with great success. The reason was obvious—a stiff, retentive soil is the one most favourable to the production of "slugs," the enemies of almost all young and tender vegetation; while a soil of an opposite kind is one of the best antidotes to their increase—the sharp, gritty particles of which a sandy soil is composed being at variance with the locomotive powers of slugs, and they are less able to crawl about in search of food, and do not, consequently, exist in such number as in the more adhesive "loams," better known, in garden phraseology, as "heavy soils."

Now, as the slug exists in the stiff soil to a more dangerous extent than in the dry, sandy one, we may reasonably infer that the planting operation ought to be done on the stiff soil in dry weather, in order that the plants may escape the ravages they would be subjected to were they planted out whilst it was wet, and

apparently favourable to the plants growing well. A few dull days, in the midst of dry weather, are to be preferred, and to such plants as those of the large Cabbage family, which root rather deeply, there is seldom that lack of moisture, in such soils, as to render more than one watering necessary; while, on the dry, sandy, or gravelly soils of some districts, they would want that assistance almost daily, in order to support themselves against the drying influence by which they are surrounded.

Now, in planting out crops on these two soils, it is easy to see that two different courses must be adopted:—the stiff, retentive one must be planted in dull, dry weather, and when the surface of the ground is tolerably dry; while the sandy, or gravelly soil must be planted, if possible, in a showery season, in order that the plants may derive the full benefit of that agent on which they must look as affording them the most important portion of their daily food, *i. e.*, atmospheric moisture. These reasons being given, it is easy to see when the best time has arrived for planting-out the various Cabbageworts in summer.

It is next a matter of enquiry as to their size, and other particulars, and this is, also, tolerably easy to define; for a small, delicate plant, with its leaf-stalks elongated, so as to be unable to support the broad portion of its leaf, is not at all likely to withstand the sunshine of Midsummer, nor the drying effects of the dog-days; but such an one may be able to endure the change which is rendered comparatively easy, when performed at a time when both the ground and the atmosphere is saturated with moisture; it then speedily accommodates itself to the altered circumstances of its position, and those leaves, which, at planting out, were unable to hold up their proper side to the sun, quickly recover strength to do so, and that before any serious harm takes place from their reversed position, for the latter was done while the sun had, comparatively, little chance to injure them, the air being moist, &c. Let it be observed, that this operation must only be performed on such ground as is tolerably free from such pests as prey on the young plant, otherwise its delicate condition, when in the state we have thus described, will speedily tempt them to its destruction. There is a class of plants less robust than the Cabbageworts, and equally, if not more, agreeable to the stomach of the voracious slugs; these must be differently treated, for they cannot well endure the scorching sunshine that the others can, neither are they so deep-rooted as to penetrate below its influence; with these, therefore, some more stringent means must be adopted to drive out, or keep at bay, those enemies they are so likely to suffer from. Usually, repeated workings of the soil will effect that purpose; but when that has not been accomplished, the addition of something or other as a repellant to them; for this, nothing is better than soot or wood-ashes, which, besides, are excellent manures; but, in addition to their use, the ground must be made very fine, and, if it be very dry, it ought not to be planted immediately after being watered; but after the top has got a little dry again, and when the plants are put in, and, if needs-be, watered, take the precaution to scatter some dry ashes, or other offensive substance, over the ground, to repel the invasion of the enemy. By this means, it is likely the plants will get hold enough with the moisture which there exists to withstand the more trying part of the season without having recourse to the watering-pot, which too often invites the depredators.

During the past spring, when the slug was making sad havoc amongst many crops, our *Peas* were saved by removing all rough and cloddy lumps from near them, and supplying their place with a finer material, to which lime, soot, or ashes had been added—the distastefulness

of these latter substances kept the enemy away until the plant outgrew their attacks. Beds of *Carrots*, too, are, especially, favourites with them; and we know of many one who had to sow again, and blaming their seedsman, had to submit to a very late crop; whereas the fault lay with their own want of care, or, it might be, want of means; for the season was very awkward, so that the proper working of the ground, which ought to have been proceeded with at various times during the winter and early spring, was sadly impeded by the unfavourable state of the weather; but when anything like a smooth surface was obtained, with a fair average depth of friable soil below, we do not see any reason why a “good plant” of Carrots might not fairly be looked for, as repeated dusting of lime, commencing about a week or so after sowing, ought to preserve the crop, unless under circumstances peculiarly favourable to their enemies. For instance, we dislike to sow Carrots after a Cabbage crop, the latter harbouring so many of these voracious vermin, which only retire underground during the day-time, to come out at night on their marauding excursions. To stop these gentry, it is necessary to seal up, as fast as possible, their place of abode, and a fine state of the soil will usually effect this object; many will still escape, and these must be deterred from committing any ravages, by their journey being made as distasteful as possible.

As much of the after-success of a plant depends on its deriving all the advantages it can at planting-time, and, consequently, avoiding all the evils, it becomes a matter of importance to select the most fitting time on which to perform these various operations; and not only that, but to watch them sedulously afterwards for some time. It is worse than useless to say that everything depends on the watering-pot, for be assured of it, that cold well-water (perhaps hard too), is just as likely to do harm as good, more especially when given in daily deluges. Much as our plant-growing friends condemn the dribbling system, it is infinitely better for out-door things than severe duckings of cold well-water; and we have been sometimes grieved to see the poor cottager watering his plants as he would a lime-heap, by buckets-full at a time, while his plants were absolutely perishing before him.

In concluding this article on planting, we must not omit to enter our protest against another practice we have seen adopted, which is, “puddling” the plants, by drawing their roots through a substance of clayey mud, made as thick as batter, and planting them with what adhered to them; this was bad, because the scaled-up condition that the rootlets were in is sadly against their after ramifying for food; while the only benefit, if it even be one, is, that they, perhaps, do not flag so much at the precise moment; but this is dearly bought by the difficulties it puts in the plant’s way afterwards.

J. ROBSON.

SWEDISH TURNIP CULTURE.

(Continued from page 168.)

THE time of sowing is an important consideration, and as it necessarily depends upon many circumstances, it will be well to name the best time for sowing the main crop for general purposes.

The first week in June, upon the majority of soils, will be found the best season.

If the crop is required for feeding by sheep on the land late in the spring, the sowing may be delayed with advantage until the last week in June; for if the soil be kind, and the climate warm, like that of the southern and eastern counties, the roots will continue to grow, in

ordinary seasons, until the middle of the month of December, and in this case, they will prove much more nutritious in the spring, and better able to withstand the changes of the weather than when sown at the earliest period.

When Swedes are required for pulling and storing early in the autumn, it is best to sow the seed the first season, that is, as soon as the land can be brought into a good state, after the middle of the month of May, and particularly upon soils situated in the northern and western counties, where a large quantity of rain usually falls, and also upon high and bleak situations, where the plant generally grows slowly.

The mode of putting in the seed by the drill is now almost universal; and although some parties still adhere to the broadcast sowing, I cannot see any advantage in so doing; on the contrary, the drill system gives the best opportunity for the application of artificial manures, and likewise offers the best chance of hoeing and cleaning the crop at the least expense.

The space and distance between the rows in drilling upon the flat should be about twenty inches, in ordinary soils which have been well tilled and manured. The horse-hoeing cannot be effectually carried out if the rows are placed nearer than twenty inches apart.

Upon shallow soils, and those much infested with weeds, it is advisable to adopt the ridge culture, the stretches being made twenty-seven inches apart; this will afford additional depth of soil, and allow ample space for the use of the horse-hoe during the whole growth of the crop.

In hand-hoeing the crop, and setting out the plants, the nature and condition of the land must be taken into account. If the soil is capable of producing large roots, leave them at eighteen inches distance in the rows, and if the land is not in high condition, set them out at twelve inches.

It must also be considered for what purpose the crop is required. If intended for early pulling, they cannot be grown too large; but in case they are required to stand the winter, they may be grown closer in the rows, as the moderate-sized roots are more nutritious, and keep better until a late period. The mode of manuring for the Swede crop is one of the most important operations, for although some manures may be said generally to be the best for growing Swedes, yet the variation of soils will alter the effect of manures, and produce very different results.

I consider experience has now decided, that whatever kind of manure is used, superphosphate of lime should always form part of the application upon all soils.*

* A few words are necessary to explain the properties of this manure. Neutral phosphate of lime, as found in bones and guano, consists of about 48½ parts of phosphoric acid, and 51½ parts of lime, and this in a comparatively insoluble state. It requires an acid, such as carbonic acid (which is the weakest), to render it food for plants. Superphosphate of lime consists of phosphoric acid 71½, and lime 28½ parts, and this is perfectly soluble in water, so that when placed in the soil, a large amount of the very food the young plant delights in is readily available; and even if some of the superphosphate is neutralized by the soil, it is yet much more soluble than in its original state. It is now very well known, that phosphate of lime is converted into superphosphate by means of a powerful acid, such as sulphuric, which removes from the phosphate two-thirds its lime. The immediate effect of this preparation is to render the phosphate of lime readily soluble and available for the plant, so that a

Upon land in a good state of tillage, and well manured for the previous wheat crop, an application of 2 cwt. superphosphate, and eight bushels of bone dust, with about sixteen bushels of dry ashes, per acre, will prove one of the best dressings of artificial manure which can be applied to loamy or strong soils, and drilled with the seed.*

Upon light gravel, or soils resting on chalk, the best application will be 2 cwt. of superphosphate, and twenty bushels of dry ashes, drilled with the seed, and 2 cwt. of the best Peruvian guano, sown broadcast, and either ploughed or harrowed in, previous to drilling the seed. The last-named application will also produce the best crop upon nearly all soils, but the roots are more inclined to rot and decay, and are, I consider, deficient in nutrition, when grown after an application of Peruvian guano upon loamy soils.

I have noticed the same effect produced by the use of any manure rich in ammonia, for although an application of town manure, night soil, or guano, will produce a heavy crop of Swedes, yet they are generally ill-shaped, throwing up long necks, with more or less tendency to decay, according to the nature of soil, time of sowing, and other circumstances.

I have adopted it as a general rule, in my own farm practice, to use manures in which bone earth is predominant for the Turnip crop, and those manures, such as night soil, yard and town manure, and guano, in all of which ammonia abounds, more or less, I use for the production of the corn and grass crops.

The best quantity of seed to be used per acre has been named, but I would observe, that a liberal allowance should always be used, because the plants grow so much faster whilst young, and consequently get out of reach of the insect enemies much sooner.

I now conclude this paper upon Swedish Turnip Culture, by stating, that it is my intention to make the after-management, such as hand and horse-hoeing of root-crops, the subject of another article upon a future occasion.

JOSEPH BLUNDELL.

SEA WEEDS.—No. 2.

I KNOW not how it is, but I never feel so alone with God, or such a sensation of pleasure and of joy, as when on some widely-extending ocean shore. It is a feeling too elevated for expression; when the mind seems lost in the contemplation of Him who, though invisible, is still present in His wonderful works. How majestic in its simplicity is the

shower of rain will dissolve at least one hundred times as much phosphate of lime from the superphosphate, as it will from the plain phosphate of lime as it is found in bones.

Many persons imagine, that by mixing bones with wet ashes or earth, they thereby render the phosphate of lime soluble as in superphosphate. This, however, is altogether erroneous; the only effect produced by this putrefaction is the greater mechanical division of the bones, and although there is no objection to the process, so long as the ammonia which is given off by the decomposing mass is prevented from escaping by a covering of earth, yet the phosphate of lime is not rendered more soluble than before, and the advantage of employing superphosphate is by no means diminished.

* Although this is a very judicious mode of applying concentrated manures, yet on large farms, where many of the fields are situated at a distance from the homestead, a great deal of labour and trouble would be saved, without any loss of advantage, by dispensing with the ashes altogether, and applying the manure alone, or in conjunction with water, as may be required. Economy, convenience, and accuracy, will be thus insured, and a drill that will accomplish this will be a desideratum, and one which we believe will soon be supplied.—S.

statement in the Scriptures, "The sea is His, and He made it." Grand, and terrible in its grandeur, as the ocean is when it "tosses up its waves on high;" beautiful in its gentleness when *He* says, "Peace, be still," and the mighty deep in obedience "*coucheth*" (Dent. xxxiii. 13); it is as nothing compared with Him who spake it into being. It is a wonderful work of an Almighty hand. It would be so even if it were only a world of waters; but tenanted as it is by the countless multitudes of living creatures, from the Leviathan which takes his pleasure therein, making the deep hoary with his gambols, to the tiny Zoophyte, too small for the naked eye to see its beauty, and "the things creeping innumerable," together with the wonderfully beautiful and varied "vegetation of the waters," fills the contemplative mind with astonishment, and the language of the Psalmist is that which it appropriates—"Such knowledge is too wonderful for me; I cannot attain unto it." "In wisdom hast thou made them all." And the beautiful plants of the ocean—the Sea Weeds—how exquisitely they are formed—how varied in their beauty—how endless in variety! And still, even these Weeds are, as it were, conformed to certain rules, and while among *land* plants "nothing is so variable or uncertain as colour, among *Algae*, on the contrary, it has been ascertained that the classes of colour are, to a great extent, indicative of structure, and, consequently, of natural affinity;" so that it has been well remarked, that they are "True to their colours"—"Constant."

There are three colours, which, in their varieties of shade, include all—the Red Weeds, the Green Weeds, and the Olive; and it was suggested to the writer that there were many striking analogies—many comparisons which might be drawn between these and the three Christian graces of "Faith, Hope, Charity;" and it is remarkable, that as these three great divisions of the *Algae* include every variety, so those three Christian graces include each and every holy attainment.

The Red Weeds, which may be considered as emblematic of Faith, grow and flourish best in deep, dark places. The colour is never good in shallow pools, and faith is ever the strongest in dark and troubled times. Some of these Weeds grow to a great size. On the Irish coast, *Nitophyllum punctatum* has been found five feet long by three broad; but Red Weeds of this size are not common, "not many exceed two feet, and great numbers never exceed six inches. And thus, it is rare to meet with a Paul, who could, in all sincerity say, that he counted all things but loss for the excellency of the knowledge of Christ Jesus his Lord; or an Abraham, whose faith enabled him to leave home and country, and to go out, not knowing whither he went, leaning on the simple, but sure promises of God; or a Moses, who, refusing to be called the son of Pharaoh's daughter, chose rather to suffer affliction with the people of God than to enjoy the pleasures of sin for a season. There are gradations of faith, from these noble specimens down to the faith of a little child (the little six-inch Weed), which, in its measure and degree, may be as perfect as a full-grown faith; for the smaller Weeds are very lovely, and often found to be full of fruit when examined through a microscope; and so the young believer may, to the eye of the Almighty, to Him who seeth not as man seeth, be well-pleasing, abounding with the fruit of the Spirit, abiding upon the rock.

As in the natural habit of Sea Weeds there is much variety, so Christians vary much in disposition. There are the joyous and the sad; believers rejoicing in the full assurance of faith, and weak ones, saying, with tears, "Lord, I believe; help thou mine unbelief." Still, they have all "one faith;" for "without faith it is impossible to please God." They have also "one hope." Hope is a cheering grace, and it may well be represented by the bright Green Weeds, "which grow in shallow places, of clear water, in full sunshine," and he may well be called a happy person whose hope is in the Lord his God. Such a hope "maketh not ashamed," for the hope that is laid up in heaven is as an anchor of the soul, both sure and steadfast, keeping the believer from being *greatly* moved, seeing that the rock on which he anchors is Christ, the hope of glory. There is a full assurance, *hope*, spoken of in the Scriptures, as well as a full assurance of faith (Heb. vi. 11); and it is a blessed

hope, for it looks forward to the glorious appearing of our Lord and Saviour Jesus Christ. And how exalting its tendency! Every man that hath *this* hope in him, "purifieth himself even as He is pure."

But now the crowning grace of Charity claims attention. It is represented by the Olive-coloured Weeds. "Some of the larger kinds of these inhabit deep water, but the greater number are found upon tidal rocks, where they are exposed to the influence of the sun and air for some hours each day." There are Olive-coloured Weeds of great size, "surpassing in the length of their fronds the tallest forest-trees." One plant of this order (a *Laminaria*), inhabiting the north-western shores of America, has "a stem no thicker than whipecord, but upwards of three hundred feet in length, bearing at its apex a huge vesicle six or seven feet long, shaped like a barrel, and crowned with a tuft of upwards of fifty forked leaves, each from thirty to forty feet in length. The vesicle being filled with air buoy up this immense frond, which lies stretched along the surface of the sea." Another kind is almost like a submarine palm-tree, while others are minute and delicately formed. Those which inhabit the deep waters may be compared to the true, the large, the abounding love of the Apostle John for the Saviour; a love which he expresses again and again, and the expression of which, indeed, forms the sum and substance of his Epistles; for charity is but another name for love, and Jesus Himself said that this law of love was the first of all the commandments—Love to God, and then love to man; and we can no longer wonder at charity being spoken of as the greatest of graces, when we are told that *God* is love! that the fruit of the Holy Spirit is love! and that it was love which brought the Saviour from heaven to become a man of sorrows and acquainted with grief, in order that we might live! What a proof of the *strong* love of God for fallen man, that He "*so* loved the world that He gave His only begotten Son, that whosoever believeth in Him should not perish, but have everlasting life." And though the love of a sinful being can never be compared to this, yet is it a part of the same heavenly grace, just as a portion of *gold*, though small, is still a precious thing, of the same origin and nature as the larger quantity; and it was this love which caused the Apostle Paul to suffer the loss of all things, and to suffer gladly; and it is the same love of Christ which constrains the believer not to live unto himself but unto God. It is this love which leads our Missionaries to leave all that is dear to them on earth, and to go forth to preach the unsearchable riches of Christ; which causes the Christian Minister and his people to visit the poor, and needy, and afflicted; and it is love which would fain wipe away the tears of the widow and orphan.

The Olive Weeds grow on maritime rocks exposed to the rise and fall of the tide, now dry, and now in full stream; still they flourish, and are refreshed and invigorated by the returning waters. And charity suffereth long and never faileth; it knows how to abound and how to suffer need; it can do all things through Christ, which strengtheneth it; and as the returning tide refreshes the plants of ocean, so the renewed supplies of the Holy Spirit strengthen this and every other grace. The more minute, but perfect and beautiful Olive Weeds may represent the gentle loving-kindnesses of a refined and delicate mind; the charity which fears to wound even when performing acts of benevolence; the love which will not let the receiver of it know that there is any self-denial exercised; that fears to hurt the feelings of another, for charity is kind; that is not ready to take offence, for it suffereth long; not vexed with the prosperity of others, for "charity envieth not;" which never plumes itself on what it has performed for others; charity vaunteth not itself, is not puffed up. The subject, however, is too full to be properly discussed in a paper like this. But may we ever "follow after charity;" for though Faith, and Hope, and Charity abide, and shall abide for ever, still "the greatest of these is charity."—S. B.

"IS THE ROUP CONTAGIOUS?"

NOTWITHSTANDING the decided manner in which your correspondent answers this question in the negative, I feel quite certain that it is contagious. My reasons for my

belief are few and simple; but, being facts, they are worth a host of arguments founded on theories and suppositions. I think it would be as well for poultry amateurs, if other of your readers would give their experience and opinions on this question.

I will premise that my poultry run contains, with a meadow, about seven acres altogether; and that, although many scores of chicken have been reared in it annually, for the last twenty years, I never saw a case of roup amongst my fowls till about six weeks ago; it is, in fact, a very healthy run. About eight weeks since, I received, from a distance, some Gold-pencilled Hamburgs; I noticed, the evening they arrived that the head of one was rather swelled, and its eyes weak and watery, but I thought some of the others might have been fighting it. I put them in a small yard parted from the greater yard by a wicker fence; and in less than a week, I found, to my horror, four out of the six Hamburgs affected with roup. The one that was first noticed by me died in a week, and since then I have lost all but one. I kept them warm, and gave them sixteen grains of jalap every other night, but they died.

Now for the question, Is the roup contagious? By some mischance, during my absence, the fowls in question were allowed to escape into the greater poultry-yard, which contained about 120 chickens, besides fifty or more full-grown fowls; they could not have been there more than three or four hours; but mark the result. In less than a fortnight (in some cases it shewed itself in a week), I had thirty chickens, of all ages and sizes, and more than a dozen of the old fowls, very bad with the roup. Now, can your correspondent say "the reason why" this was, if the disease be not contagious?

A few months ago, a friend of mine, who has one of the best runs I know of for fowls, both as regards soil and size, received a fowl from a London dealer, that had no doubt been caged for some time, perhaps with infected fowls. However that may be, he turned it down with his others—though he had noticed previously that it did not appear well, but I suppose he fancied a run in the country would restore it—and what was the result? the roup was thus and then introduced into his yard, and he has not yet got rid of it. The bought fowl died in a week or two, and he has since lost numbers.

I consider this disease to be the curse of the poultry amateur; and, as to its being contagious, I have not the slightest doubt, nor has my friend to whom I have referred.

ZENAS.

THE LAST BEE SEASON.—SWARMING.

FROM THE COTTAGE GARDENER of to-day, I find that Mr. Payne considers this the worst bee season in his experience. It may be, and unquestionably is, a very bad one, but there are exceptions. This county, Nottinghamshire, is one. I believe our bees have not wintered or springed better for many years. There have been already (May 26) several fine swarms in my locality, and I am informed but very few hives have perished. I have not lost one, although all were weak in the autumn, and not any were fed.

As swarms may now be expected daily, and as they are occasionally difficult to live, will you allow me to recommend patience and perseverance if the bees go away. I once recovered a swarm after I had for some time considered them hopelessly lost. A short distance from my garden is a fine Collegiate Church, whose ancient towers have furnished a home for many a swarm of bees; at this time I believe there are several colonies located there. It was a fine afternoon, calm and sultry, the very weather of all others one would wish bees to select for their migration, when out came the swarm, and a fine swarm it was. Instead of alighting on a neighbouring tree (there were plenty at hand), away they went, helter skelter, to the church. I and my servant followed as quickly as we could. When we got into the churchyard we found the swarm completely dispersed. The bees were flying around the three large high towers in utter confusion, as if each member of the colony was endeavouring to find an independent home, or as if they had lost their queen. We watched them for nearly an hour, not with any hope of obtaining them, but out of curiosity, to ascertain where they took up their habitation. At last we fancied about the great tower the bees seemed

thicker than on any other part of the building, and we concluded they had discovered a resting place. We looked until we were nearly blinded, but at last my servant fancied the bees came rather lower down the tower; he immediately ran to the nearest hedge, and tore a large bough from a tree, with which he returned to the foot of the tower, holding the bough high above his head. Presently a few bees came around us: gradually they increased, and at length a few settled on the bough; in about five minutes a considerable number had collected on it; and in about five minutes more it was evident that the ruler of the colony was amongst the number. On this becoming apparent, I made my way home as speedily as possible, and returned with a hive. When I got back, to my great satisfaction, I found my servant still standing in the same position, not, however, as I had left him, covered with wearied bees, but with a fine, strong swarm, beautifully formed, pendant from his bough. It is a curious circumstance, that the taker of the bees had uncovered head and bare arms, and, although he held the swarm more than twenty minutes, and had thousands of bees on his person, he escaped unstung. This I attribute to his remaining perfectly passive the whole time. None should undertake the management of bees who are not calm and collected.—A COUNTRY SOLICITOR.

ON THE MANAGEMENT OF SILKWORMS.

WITH COMMENTS AND ADDITIONS.

By the Prior Jacopo Ricci.

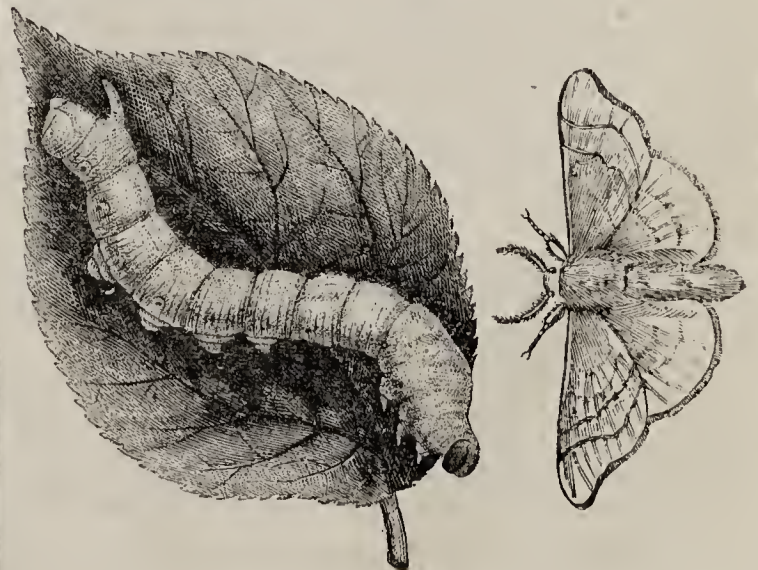
SECTION I.

THE Silkworm is a native of the South of China, a country warmer than Italy, and was introduced thither in the twelfth century.

It is said that two Persian Monks, who had long resided in China, contrived to elude the vigilance of that jealous government, and hiding the seed or eggs of the insects in hollow caves, succeeded in bringing them to Constantinople, where they presented them to the Emperor Justinian, who liberally rewarded them, and entrusted them with the care of rearing the worms.

The Silkworm was introduced into Sicily about the year 1130. Thence to Florence and Bologna, but by whom and when are matters of uncertainty. There are traditions among the vulgar relative to the treatment of Silkworms; fables which would have us consider them as less delicate than the best authors describe them, and persuade us to diminish the scrupulous care necessary to their well-being. In Turkey and India they are kept in rooms as with us; in the South of China and Persia they formerly lived in the open air, but as the havoc made amongst them by birds and insects was found to be great, they are now reared under cover as with us.

It is also true, that in those countries they are kept in larger quantities, and two or three harvests of cocoons are gathered in, but one harvest in Italy is worth all those collected in countries, where, according to the accounts of travellers, the same care is not taken of them.



This worm, as every one knows, is hatched in the form of a caterpillar, from an egg laid by a moth, and is furnished with feet wherewith to transport itself from one place to another. It has two jaws formed like a saw, which move horizontally to masticate the leaves of the mulberry, which form its food.

Under the mouth it is provided with a small hole or *filiera*, which communicates with two cavities (spinning-machine or spinners), where is secreted a fluid which it sends forth from the spinners in the form of silk. Under the feet it has two orifices which serve as lungs. It grows rapidly, and changes its skin four times; these changes are called sleep or sickness—at such times it does not eat, and appears torpid.

Arrived at its full growth, it forms of the silk spun from the spinners a cell or cocoon, in which it encloses itself, and becomes apparently dead, it assumes a shell which covers its whole body, and is then called a nymph or *chrysalis*. After some days it pierces the shell and cocoon, and issues forth a perfect moth. The female moth impregnated by the male lays many eggs, and then both die.

Towards the end of March, the eggs, vulgarly called the seed, should be detached from the cloths in which they have been preserved during the winter; the cloths are dipped into water, and there kept for some minutes, then spread on a table, and the eggs removed with a blunt knife; they are next washed with pure water, the few that float being rejected as not likely to hatch, or if hatched, to produce sickly worms. The water is then poured off, and the eggs again washed in white wine. They are placed to dry on cloths spread on boards, and when dry are preserved in thin layers on dishes or paper, or in bags in an airy and dry situation, till the hatching season.

Many breeders are unwise enough to buy these eggs of those who make a trade of it; a mistake occasioned, usually, by negligence or indolence, and productive of many inconveniences. However, as it may sometimes be necessary to purchase, it may be well to describe the signs by which good eggs are known. They should not be concave, and when pressed with the finger should hold a transparent glutinous fluid. They should be of an ashy-grey colour, neither yellow, red, nor white. Besides this, it should be ascertained that the eggs have been well prepared, that they do not come from a distance, and that large quantities have not been collected in the same vessel, circumstances which may deteriorate their quality, to the great loss of all concerned. Again, as to the quantity of eggs to be hatched, many proceed by chance, not calculating the amount of food they are likely to have, and often find themselves in difficulty, to the detriment of their real interests. Repeated observations have shown that the first step in the right direction, is to ascertain the quantity of leaves you will probably have. Modern writers on the new and approved system calculate thus:—To obtain one pound of cocoons, you must have fourteen pounds of leaves as they are gathered from the tree, that is, not cleansed, nor the useless parts removed. One ounce of eggs may yield 180 lbs. of the best cocoons, and sometimes more. For every ounce of eggs, 2,520 lbs. of leaves are required. Of course, if many worms die in their first change, a smaller quantity will be sufficient, but it can never be truly economical to work without rule. It is better to have too much food than too little, as so often happens, and worms accustomed to one kind of food suffer by any change.

The master should regulate the number of his worms by the number of persons in his family who may be trusted to tend them, and thus verify the proverb—"The less seed the more cocoons."

Many make the mistake of supposing that the worms should be tended solely by women; whereas they require assiduous care by day and night, together with foresight and judgment, rarely, indeed, found in woman.*

In countries where they understand the true method of profiting by this season, some work on the farm, whilst others, besides stripping the leaves, remove the beds and other impurities, prepare the twigs, and do every other fatiguing work, leaving to the women the care of the worm-chamber, which should never be left, day or night, especially

at certain seasons, taking care that no one sleeps there, as the exhalations from the human body would infect the air, which must be kept as pure as possible.

When the buds of the mulberry-tree open the eggs may be hatched, but not before, because, if frost should occur to arrest the development of the foliage, either the worms must perish, or food be procured for them at great loss and inconvenience.

To proceed to the method of hatching the eggs, that usually practised amongst us, of putting them into little bags, and carrying them by day about the person, and by night keeping them in the bed clothes, is not approved by those who have made the greatest progress in the art. In the first place, the heat thus communicated to the eggs is not equal; and in the next, the exhalations from the human body are hurtful to them. The plan attended with the best success, is to employ artificial heat, placing the eggs in a room warmed by a stove, which diffuses a more even temperature than an open fire, and consumes much less fuel, and may serve not merely for one worm owner, but for as many neighbours as may agree to use it.

The room should not be too large to be easily warmed; it should be on an upper floor, that it may be dry, and quite clean, cleanliness being very essential, well paved, and the walls well plastered. It should have at least two windows, opposite each other, furnished with glass sashes, and also blinds, that the air may not strike the worms when the sashes are open. Besides these, there must be ventilators in the floor under the windows, or in the ceiling, to open with a slide, so as to introduce fresh air into the room at pleasure. In a convenient position, should the room be large, there must be a brick stove or two opposite each other, but detached from the wall, that the warmth may be more equally diffused.

In the room there must be in one corner a chimney, or, if the room be large, two, in opposite directions; fires lighted in these with very dry fuel, serve to purify the air. The chimnies must have doors, which exclude the external air when necessary.

The eggs being arranged in thin layers in little boxes of pasteboard, or on boards, and numbered, they are placed on a hurdle or plank, with a cover over them.

If there be many boxes, then the hurdles may be placed one over the other, but not so high as to prevent the eggs being conveniently attended to. According to this plan the eggs will be hatched in about ten days.

It will be well to regulate the temperature of the room by a thermometer, an instrument familiar to the most ignorant. It would be better to have two thermometers, one at the stove, the other opposite. When the time approaches for the hatching of the eggs, the temperature must be gradually raised. If the thermometer be lower than 14° Reaumur (equal to 64° Fahrenheit), kindle a fire to raise it to that point; if on the contrary it be higher, close the blinds of the windows exposed to the sun, and open the opposite ones, as well as the door and ventilators, if necessary. On the third day the temperature must be raised to 15° R. (66° F.), and so increase one degree each day, till it rises to 22° R. (82° F.).

These precautions are so necessary, that even by night the room should be visited, to ascertain that the temperature be maintained at the proper height. The owners of the stove will find a self-registering thermometer very useful, as it will indicate the highest degree of heat or cold that has occurred in their absence, thus proving whether the attendants have done their duty.

If, in heating the room, there should be danger of the eggs suffering from dryness, two vessels of water may be placed in it, the evaporation from which will rectify what is amiss, and if this be not sufficient, the floor may be sprinkled with water. And as it is very necessary to know whether the atmosphere be dry or damp, let a dish of common salt be placed in the room—if the salt be dry, the air is dry, if not the air is damp.* In this case a fire must be lighted of

* Our readers must remember that the writer of this was a Monk!—
ED. C. G.

* For this purpose a hygrometer will be found useful, and wealthy agriculturists will do well to furnish themselves with one, as salt is slow in indicating damp, and not always true. When the hygrometer stands at 70°, the air is too damp. This instrument foretels changes in the weather, and thereby the inconveniences of rain may be avoided, and the fine weather turned to the best account in other rural pursuits. If the hygrometer indicates damp in fine weather, rain is not far off.

dry wood, and the flames will purify the air, and create ventilation. Meanwhile, the windows, ventilators, and doors must be opened as often as necessary, it being most important to the health of the worms that the air should be dry. In the course of the ten days the eggs must be turned at least once a day with a spoon.

(To be continued.)

REMOVING BEES.

I PROPOSE, during the day on which it is intended to move the bees, to drive them, as for making artificial swarms, into an empty hive with a slide of perforated zinc in the top, and place this hive on a board with a hole through it covered with perforated zinc, set it in the place of the original stock; this latter, after securing the combs from falling, to be put upon another board with a hole in the centre, also covered like the others with perforated zinc, and set on the top of the hive containing the bees. The entrance to the upper hive should, I think, be stopped, and the two hives and boards securely tied together. Through the hole at the top of the bottom hive, and the bottom board of the upper hive, the heat will ascend and prevent the young bees and brood from perishing from cold; and I think, if the combs from their weight should break down, the honey would escape without drowning the bees in the under hive.

As respects the van, I propose to cover the bottom some six or eight inches with brushwood, or chips from the hoop renders, as being equally elastic and porous, and stronger than straw to bear the pressure of a sudden jerk without injuring the combs. Upon this brushwood, or chips, to lay four bars of wood at equal distances across the van, and on these to lay one or two boards, side by side, the length of the van, on which to place one or two rows of hives, according to the number to be removed. In the evening, stop up the entrance of the hives with horsehair, or some other porous substance, and place the joined hives in the van. Upon the top rails of the van place four other stout rails across the van, these will require to be tied at each end to the rail, and placed to correspond with those under the hives. With strong cords unite the upper and under bars in pairs, raising the lower bars just enough to clear the foundation, and to swing slightly; and, it appears to me, they might travel any distance a van could go, at a slow pace, during one night.

This day (16th May), the first drone has appeared; my hives all face the north, and are as forward as any one's in this neighbourhood.—JOHN SOWAKER, *Crawley, near Guilford*.

[You will endanger your stocks greatly by driving them; for the combs must necessarily be much shaken in this process, so much so, as to render them unable to bear the motion of the van. Why not let them swarm where they are, and remove the swarms? Your arrangements as regard the van are very good. If the bees *must* be removed, the safest plan would be to cord the floor-board of each stock, as they now stand, firmly to the hive, secure perforated zinc (or something of the kind) to the entrance, and invert the hives, remove them in the night, and fix them in their places as early as possible the next morning. As drones appeared on the 16th, you may expect swarms very soon.—J. H. P.]

CHEL TENHAM SUMMER EXHIBITION OF POULTRY.

THIS first show of the season took place on the 1st and 2nd instant, at the Royal Old Wells. We never saw an exhibition at which so few bad birds were shown, and we congratulate the Messrs. Jessop at this most deserved success. As we shall descant very fully upon the various specimens next week, we shall now confine ourselves to a mere enumeration of the successful exhibitors.

Class 1.—COCHIN-CHINA (Cinnamon or Buff). Cock and two Hens.

First prize, John Fairlie, Esq., Cheveley Park, near Newmarket. (Pen 9.) Second prize, Mr. James Catelle, Moseley Wake Green, near Birmingham. (11.) Third prize, Mr. W. Plummer, Brislington, near Bath. (22.) And Thomas H. Potts, Esq., Kingswood Lodge, Croydon. (24.)

Class 2.—COCHIN-CHINA (Partridge or Dark). Cock and two Hens.

First prize, Mr. W. B. Mapplebeck, Bull Ring, Birmingham. (34.) Second prize, Mr. C. Punchard, Blunts Hall, Haverhill, Suffolk. (37.) Third prize, Mr. C. Punchard, Haverhill. (38.)

Class 3.—COCHIN-CHINA (White). Cock and two Hens.

First prize, George Hodgkinson, Esq., Moseley Wake Green, near Birmingham. (46.) Second prize, Mrs. S. R. Herbert, Powick, near Worcester. (44.) Third prize, Mrs. S. R. Herbert (43.)

Class 4.—COCHIN-CHINA (Black). Cock and two Hens.

First prize, Wm. Cust Gwynne, Esq., M.D., Sandbach, Cheshire. (54.) Second prize, John Fairlie, Esq., Cheveley Park, near Newmarket. (52.) Third prize, W. Lort, Esq., Great Heath, near Tenbury. (56.)

Class 5.—COCHIN-CHINA CHICKEN (either variety). Two couple, hatched since 1st January, 1853.

First prize, Capt. Snell, Shirley Cottage, Norwood, Surrey. Two hatched 4th of February; two 1st of March. (76.) Second prize, A. C. Sayers, Esq., Clanville House, near Andover. February and March. (58.) Third prize, Mr. W. Plummer, Brislington, near Bath. 20th of February. (94.) *Highly Commended*.—Mrs. L. C. Stow, Bredon, near Tewkesbury. Nine weeks. Buffs. (59.) Mr. John Bidwell, Guildford, Surrey. March 2nd, 1853. (69.) Mr. C. Cooper, Guildford. March 20. (70.) J. R. Rodbard, Esq. March 10, 1853. (75.) G. Hodgkinson, Esq., Moseley Wake Green, near Birmingham. 21st of March. (80.) Mr. Edward Farmer, Greet, near Birmingham. March 1st, 1853. (87.) Mrs. E. George, The Rookery, Chaldon, near Coulsdon, Surrey. Third week in March. (91.) Mr. C. Punchard, Blunts Hall, Haverhill, Suffolk. Four months. (97.) E. W. Haslewood, Esq., Bridgnorth. Second week in March. (99.) Mr. James Buckley, Llanelly, Carmarthenshire. End of February. (107.)

Class 6.—DORKINGS. Cock and two Hens.

First prize, Captain Hornby, R.N., Knowsley Cottage, Prescott. (110.) Second prize, Captain Hornby, R.N. (109.) Third prize, Miss A. Wilcox, Nailsea Court, near Bristol. (134.)

Class 7.—SPANISH. Cock and two Hens.

First prize, Capt. Hornby, R.N., Prescott. (140.) Second prize, Capt. Hornby, R.N. (141.) Third prize, Mrs. L. C. Stow, Bredon, near Tewkesbury. (142.)

Class 8.—GAME. Cock and two Hens.

First prize, Capt. Hornby, R.N., Prescott. (152.) Second prize, Mr. John Pickering, 47, Edgbaston-street, Birmingham. (153.) Third prize, Capt. W. H. Dwarries, R.N., Rockville, Cheltenham. (153.)

Class 9.—MALAY. Cock and two Hens.

First prize, James Leighton, Esq., Cheltenham. (170.) Second prize, Mr. John Pickering, 47, Edgbaston-street, Birmingham. (169.) Third prize, Mr. C. Oldham, 153, Moor-street, Birmingham. (176.)

Class 10.—POLANDS (Black with White Crest). Cock and two Hens.

First prize, G. C. Adkins, Esq., Edgbaston, Birmingham. (178.) Second prize, C. Rawson, Esq., Walton-on-Thames. (177.) Third prize, Mr. B. Holmes, 112, New-street, Birmingham. (180.)

Class 11.—POLANDS (Gold-spangled). Cock and two Hens.

First prize, C. Rawson, Esq., Walton-on-Thames. (185.) Second prize, T. H. Potts, Esq., Kingswood Lodge, Croydon. (189.) Third prize, R. H. Bush, Esq., Litfield House, Clifton. (183.)

Class 12.—POLANDS (Silver-spangled). Cock and two Hens.

First prize, C. Rawson, Esq., Walton-on-Thames. (190.) Second prize, Mr. P. Jones, jun., High-street, Fulham. (193.) Third prize, Messrs. S. C. and C. N. Baker, Beaufort-street, Chelsea. (194.)

Class 13.—HAMBURGHES (Gold-spangled). Cock and two Hens.

First prize, G. C. Adkins, Esq., Edgbaston, Birmingham. (198.) Second prize, G. C. Adkins, Esq. (199.) Third prize, Mr. James Blackham, Thornhill Farm, Handsworth. (202.)

Class 14.—HAMBURGHES (Silver-spangled). Cock and two Hens.

First prize, Mr. Henry Wiggin, Monument House, Edgbaston, Birmingham. (206.) Second prize, C. Rawson, Esq., Walton-on-Thames. (205.) Third prize, Mr. H. Herbert, Powick, near Worcester. (210.)

Class 15.—HAMBURGHES (Gold-pencilled). Cock and two Hens.

First prize, Mrs. Drake, Bucknell, near Bicester. (213.) Second prize, Mr. J. B. Chum, Coalbrookdale. (215.) Third prize, Mr. D. Burges, jun., Bristol. (216.)

Class 16.—HAMBURGHES (Silver-pencilled). Cock and two Hens.

No first prize. Second prize, Mr. D. Burges, jun., Bristol. (230.) Third prize, Mr. Edward Simons, Birmingham. (224.)

Class 17.—BANTAMS (Black). Cock and two Hens.

First prize, John Fairlie, Esq., Cheveley Park, near Newmarket. (231.) Second prize, J. Fairlie, Esq. (232.)

Class 18.—BANTAMS (White). Cock and two Hens.

First prize, Miss Laura E. Jessop, The Aviaries, Cheltenham. (241.) Second prize, John Fairlie, Esq., Cheveley Park, near Newmarket. (238.)

Class 19.—BANTAMS (Gold-laced). Cock and two Hens.

First prize, G. C. Adkins, Esq., Edgbaston, Birmingham. (244.) Second prize, Mr. W. H. Holcombe, Campden, Gloucestershire. (247.)

Class 20.—BANTAMS (Silver-laced). Cock and two Hens.

First prize, Mrs. Hosier Williams, Eaton Mascott, Shrewsbury. (251.)
Second prize, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott. (249.)

Class 21.—BEST CROSS-BRED. Cock and two Hens, for useful purposes. Cross to be named.

First prize, Mr. John Gay Attwater, Haullingwood Farm, Cobberley, near Cheltenham. Malay and Dorking. (258.) Second prize, Mr. Thomas Lyne, Malmesbury, Wiltshire. First cross between Pheasant Malay cock and brown Dorking hen. (255.)

Class 22.—THOROUGHbred. Cock and two Hens. Deserving Specimens of any variety, not named in the Schedule.

Three prizes of £1 each. John Fairlie, Esq. "Scotch Bakies or Dumpies." (263.) Thos. H. Potts, Esq., Kingswood Lodge, Croydon. "White Polands." (270.) Mrs. W. H. Hyett, Painswick House, Painswick. Silk Fowl. (277.)

Class 23.—CHICKENS. Two couple, hatched since the 1st of January, 1853, of any distinct breed for useful purposes (Cochin-China excepted).

First prize, Rev. John Herbert, Leigh Parsonage, near Reigate, Dorkings. Four months. (291.) Second prize, John Fairlie, Esq., Cheveley Park, Newmarket. Four months. (292.) Third prize, John R. Rodbard, Esq., Aldwick Court, Wrington, Somersetshire. Dorkings. March 4, 1853. (285.)

Class 24.—TURKIES. Cock and one Hen.

First prize, John Fairlie, Esq., Cheveley Park, near Newmarket. (293.)
Second prize, J. R. Rodbard, Esq., Wrington, Somersetshire. (296.)

Class 25.—GUINEA FOWL. Cock and one Hen.

First prize, J. R. Rodbard, Esq., Aldwick Court, Wrington, Somersetshire. (300.) Second prize, Capt. Levett, Huelecote. (303.)

Class 26.—PIGEONS (Carriers). Pairs.

First prize, G. C. Adkins, Esq., Edgbaston, Birmingham. (308.)
Second prize, G. C. Adkins, Esq., Edgbaston, Birmingham. (306.)

Class 27.—PIGEONS (Runts). Best Pair.

First prize, G. C. Adkins, Esq. (312.) Second prize, C. Rawson, Esq., The Hurst, Walton-on-Thames. (310.)

Class 28.—PIGEONS (Pouters or Croppers). Best Pair.

First prize, G. C. Adkins, Esq. (315.) Second prize, Capt. W. H. Dwaris, R.N., Rockville, Cheltenham. (316.)

Class 29.—PIGEONS (Black Fantails).

First prize, G. C. Adkins, Esq., Edgbaston. (319.) Second prize, G. C. Adkins, Esq. (320.)

Class 30.—PIGEONS (White Fantails).

First prize, Mr. J. Jennens, Moseley, near Birmingham. (327.) Second prize, Alexander Smith, Esq., Moorend House, Charlton Kings. (326.)

Class 31.—PIGEONS (Jacobins).

First prize, G. C. Adkins, Esq., Edgbaston, near Birmingham. (329.)
Second prize, Alexander Smith, Esq., Moorend House, Charlton Kings. (334.)

Class 32.—PIGEONS (Almond Tumblers).

No first prize. Second prize, G. C. Adkins, Esq., Edgbaston, near Birmingham. (336.)

Class 33 PIGEONS (Any other varieties).

Three prizes of 10s. each.—G. C. Adkins, Esq. (339.) G. C. Adkins, Esq. "Australian Bronze-Wing Pigeons." (340.) Mr. John Child. (345.) The whole Class commended.

Class 34.—GEESF, Gander and Goose.

First prize, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. (357.) Second prize, C. Rawson, Esq., The Hurst, Walton-on-Thames. (356.)

Class 35.—DUCKS (White Aylesbury). Drake and Duck.

First prize, Mrs. L. C. Stow, Bredon, near Tewkesbury. (365.) Second prize, The Hon. Greville Howard, Lydiard, near Swindon, Wilts. (367.)

Class 36.—DUCKS (Rouen). Drake and Duck.

First prize, Hon. Mrs. G. M. Howard, Milbourne, near Malmesbury. (381.) Second prize, Capt. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. (380.)

Class 37.—DUCKS (Muscovy). Drake and Duck.

First prize, N. N. Dyer, Esq., Bredon, near Tewkesbury. (384.)
Second prize, Mr. H. King, Park-place, Cheltenham. (385.)

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

MANY CORRESPONDENTS remain unanswered, owing to the Editor's absence this week.

PEACH LEAVES BLISTERING (*W. B.*).—This is generally the result of sudden changes of weather, or of hot days and cold wet soil. As soon as they can be dispensed with, cut off all the blistered parts, leaving the lower part of the leaf if unblistered. As soon as the earth gets warmer, or the air cooler, the healthy foliage will enable you to dispense with the blistered leaves altogether.

LATERALS ON VINES (*Ibid.*).—If you mean to fruit next season, on the long rod system, allow the laterals to grow one joint on these rods, and stop them there, but remove them altogether from the first shoots bearing the fruit. If the vine is rather weak, encourage a few even among them to assist root action. If you mean to spur-prune, by cutting back these short-bearing shoots to one bud next summer, you will encourage several laterals to grow near the base of these shoots, and stop them to one joint. As the wood approaches maturity, remove all laterals, whatever be the mode of pruning adopted.

PENNSYLVANIAN ROSE (*Ibid.*).—A rough-looking fellow, with crimson flowers—a native of North America, and sometimes called *Virginiana*, and *Carolina*, and several names besides.

OXALIS WITHERING (*J. H.*).—The hot, dry weather, has hastened the maturing process. From your description, they are just everything they ought to be. Keep the roots in pans, among dry sand, now that you have removed them from the soil, and pot afresh in autumn, as soon as you see the least signs of vegetation.

MOIST ATMOSPHERE IN VINERIES (*R. H.*).—You seem to have acted quite right. You may syringe your vines night and morning, until they are in bloom, stop them, and when the fruit is set, give them a good syringing again, to get rid of all remains of flowers, &c.; after that we do not like much syringing, but we keep the atmosphere moist by scattering water, in hot days, on the floor, path, stage, &c. We continue this moist atmosphere, with plenty of air, until the berries begin to change colour, and then we gradually let the house become as dry as we can. Mind, in giving the moisture, attend to ventilation, or the mildew may soon come.

GLASS STOCK HIVE (*Sagittarius*).—It is very rarely that bees in a glass stock-hive survive the winter; the condensed vapour (notwithstanding all the ventilation that can be given) generally destroys the bees. We know nothing of King's hive. Ventilate your bee-house as much as possible every sunny day, whilst the sun shines upon it. It would be well to fix a thermometer in it, and when above 75° to open it.

PROLIFICACY OF SHANGHAI FOWLS.—"As so much interest is at present taken about Poultry in general, perhaps you may consider the following facts worthy of notice:—In August last, Mrs. E. George, of the Rookery, Chaldon, near Coulsdon, Surrey, presented my wife with a pair of her Cochin chickens (and a valuable present it is likely to prove). The Pullet was hatched about the middle of July last. She commenced laying on the 12th January, and up to May 13th has laid 85 eggs; and up to the present time, May 24th, these eggs have produced us 63 chickens, 60 of which are living, and strong, healthy birds, besides a sitting of eggs from the same to hatch in the first week in June. Now, I think, considering what an unfavourable season it has been for all kinds of stock, and poultry in particular, that this argues favourably for Cochin-China's, both for hardihood and prolificacy.—JOHN SILLETT, Kelsale, Saxmundham, Suffolk."

BUCKWHEAT (*H. C.*).—Buckwheat makes excellent food for poultry; and may be grown upon very poor land; the soil is required to be perfectly pulverised and clean. One-and-a-half bushels is sufficient seed for an acre, and may be sown any time during the month of May. The produce, in favourable seasons, will reach to 40 or 50 bushels per acre.—J. B.

THE POULTRY BOOK (*J. F.*).—The rearing, management, and feeding of *Dorking*, *Spanish*, and *Game* chickens, will receive due attention in No. 3, of the Poultry Book; as also any diseases to which those fowls are peculiarly subject. Pure-bred *Spanish hens*, of good form and feather, would now readily sell for six times the sum you mention. We never recommend dealers. The white face is not visible in *Spanish chickens*: the Cockerels acquire it sooner than the pullets, the latter rarely showing it in any perfection till eight or ten months' old.—W.

LUCERNE (*A Subscriber*).—Watering it with liquid-manure will be very beneficial. Clover eaten by cows does not give an unpleasant flavour to their butter. It is quite impossible to tell why your *Raspberries* fail, not knowing either your soil, situation, or mode of culture. Propagating *Sea Kale* by slips or cuttings of the crowns is best done at the end of March or early in April.

MEASURING ANGLES (*Scrutator*).—You are quite right as a mathematician, and Mr. Fish is right as the mode of measuring angles adopted by gardeners.

BLACK BEETLES (*E. B.*).—No effectual mode of destroying these vermin is known. If any reader knows of a mode of exterminating them we shall be obliged by its communication.

ANTS' EGGS.—P. C. would be obliged by the information how Ants' Eggs are best separated from the earth that is obtained with them.

TAYLOR'S BAR HIVE.—Mr. Payne informs us that the space between each two bars is half-an-inch, and not a quarter-of-an-inch, as stated in his June "Apiarian's Calendar."

CALCEOLARIAS (*E. J.*).—No. 3 seemed good, but they were all squeezed flat. Calceolarias, almost more than any other flower, require to be packed lightly in damp moss, and in a box that cannot be pressed inwards.

BEE-GLASSES.—J. W. wishes to know where these can be obtained with flat tops.

COCHIN (*Enquirer*).—It is pronounced as if spelt *Ko'cheen*.

INSECTS (*W. W. Poley*).—The small insects found in your Melon frame, and under the leaves of the plants eaten by them, is a species of

mite, *Acarus hortensis* (Curtis in *Gard. Chron.*, 1844, page 316). The larger insect is one of the small species of Dung-beetles, *Aphodius merdarius*; and the smallest individuals sent, which you have confounded with the *Acarus hortensis*, are a very different species, found only on beetles, *Acarus coleopterorum*.—Repeated fumigation, and powdering the plants with sulphur, will probably have the effect of driving the former away. The *Aphodius* is only an accidental visitor.—I. O. W.

CUCUMBERS ROTTING AT THE END WHEN FROM THREE TO SIX INCHES LONG, AND YET THE VINES VIGOROUS (*A Subscriber since January, 1851*).—We should almost fear that the roots have got too near the hot-water tank, and that the soil is, in some places, rather poached with moisture, at least, we once had many young fruit going off in that manner, and we attributed it to two causes—the soil getting too hot at times, and also in parts too wet; drainage would help in both cases. The foliage is less easily injured, though even that will be influenced in time. It is possible to have the vines too strong, so that the juices are unfit to nourish the fruit. In that case, extra air and clear-water waterings will furnish a remedy.

VINE-LEAVES TURNED WHITE (*F. D. H.*).—The specimens sent have been scalded, either from want of air, glass full of burning spots, very languid root-action, or a combination of all, during these very hot days. Many vines, such as the Sweetwater, Frontignans, &c., are the better for a little shade when very sunny weather succeeds suddenly weather that has been dull. If shading, in such circumstances, is inapplicable, more care is necessary to keep the atmosphere of the house moist, and yet give plenty of air. If you intend growing fruit on young canes next year, you may prune away all the matter from the old barren rods by degrees, say in the course of three weeks, and then the rods themselves, but do not do it now all at once, or you will give a check to the plant. If on the spur-system, the barren side-shoots, after being shortened to from five to seven eyes, must be retained.

VINE-LEAVES MILDEWED (*Ibid.*).—There is nothing so effectual as sulphur. If used in a dry state, mix a little fine lime with the sulphur. Use the application as soon as the disease appears. You would see lately how to apply a mixture of lime and sulphur when boiled together. If the disease is not inveterate, the dry form is as good as any; but in no case can you expel it without injuring the foliage, after it has been allowed to eat itself into the plant, whether it attacks leaves or fruit.

VINES AND PEACHES NOT FRUITING (*Ibid.*).—The chief reason, since both showed, the one bunches, and the other bloom, is want of the wood being properly ripened the previous year: that is, provided the management has been at all right.

ENGINE-HOUSE GARDENING (*A Learner*).—See page 134 for much that will suit you. You would find the lumber-room, with windows, a good help to the engine-room, because you could raise things in the latter and transfer them to the former to bloom, &c., or many might be wintered there. The means of giving more air will enable you to grow the plants better in the engine-room; but we must just reiterate, that the extent of your gardening must, so far as flowering-plants are concerned, depend upon the extent of light you can command. True, you may raise many things from seed; but just to the extent of direct light you can give them will they succeed with you afterwards. If you cannot keep down the high temperature in your tool-room by opening the skylight, or shading it, or letting in air by other means, then we can suggest no other mode. The large window, without direct sun, would do for keeping plants in bloom in summer, and for keeping many things in winter. Your Mignonette will succeed just as you can give it a cool place after it is up. The Capsicums will stand more heat; but after they are two inches in height they will do little good, unless you get them near the window, though you might forward them sufficiently to plant out-of-doors. The same may be said of flowering plants in general. What was said in answer to your other letters contained the whole gist of the affair. *Lycopodiums* are not flowering plants, but different kinds of interesting mosses, that do not require nearly so much direct light as blooming plants. They would do well at the back of the flowering plants, near the window. Some of the commoner you may purchase for about one shilling per plant, and from that to five shillings, and we really cannot say how otherwise you are to procure them, unless you can get them for nothing. There have been full instructions about mushroom; your ideas are correct enough, but we do not think it would be worth your while attempting them except from September to April. We fear the heat in summer would be too much for them. One thing more: keep in mind that time is valuable; express your wishes in few words; and come at once to the point. The next correspondent is quite an example; he just says—Name

SIX BEST FUCHSIAS GROWN AT THE PRESENT TIME (*A. B., Essex*).—We cannot say; but under correction, would name the following as not likely to disappoint—*Alpha*, *Nil Desperandum*, *Clapton Hero*, *Princess*, *Ariel* (Banks), *Delicata*. And for three more—*Pearl of England*, *Don Giovanni*, and *Elizabeth*. We cannot yet say much of new ones.

BEES—PREVENTING SWARMING.—*Clericus, Beds.*, says—"I had not read Mr. Payne's Calendar in to-day's number much more than a couple of hours, when I was called out to hive a swarm from my strongest hive. I saw drones from it on the 11th of May, and put on a ten-inch glass super the next day, nevertheless, it has swarmed. Alas! I desecant, on every opportunity, to the cottagers in my parish of the merits of the non-swarming system, and shew them, in words, how much to their advantage bee-keeping on such a system would be (only this very morning an old bee-keeper yielded to my persuasion, cut a hole in one of his hives, and put on a super that I had given him for the purpose); but, in practice, I cannot keep my own bees from doing the very thing (that is, swarming) which I tell my parishioners to prevent with theirs. I like the depriving system (and the beautiful white honey it has afforded me, in spite of disappointment), and wish to carry it out, but it does not seem as if I should succeed in doing so thoroughly, or with any certainty. Mr. Payne, if he saw the hive from which the swarm issued to-day, might ascribe failure with it to its height. Three swarms and a cast went together last year from neighbouring apiaries. I purchased them,

and having no hive that would nearly hold them, was forced to put the greatest part of one large hive under another, and fasten them together, for a habitation for the enormous colony, with a glass on the top; the height, of course, is great; but that, or something else, displeased the bees, for in the glass they have worked not, and I must add this to other instances of want of success in inducing the bees to stay at home."

[Your ten-inch glass super was much too deep; one-half the depth might have been put on first, and when the bees had established themselves in it, another might have been put below it; but, it must be remembered, that simply putting on a super will not prevent bees swarming, unless they are induced by some means to work in it; and, perhaps, after fixing on the most proper time, is the nicely adjusting a few pieces of guide-comb inside it, some at the top, and a small piece the whole way along the zinc-tube, and made to touch the combs in the stock-hive. The white fragments enclosed, are grained or crystalized honey, caused by extreme cold. Honey, in this state, is useless to bees for any purpose whatever, and must be brought out of the hive by them to make room for brood, or storing honey. Driving bees never succeeds but in full, populous hives. Had a little fungus, instead of brimstone, been used, there would have been no difficulty or loss.—J. H. P.]

CAMELLIA NOT PRODUCING FLOWER-BUDS (*An Old Subscriber*).—You would have seen, at page 139, how Mr. Errington causes his plants to set their buds, and he has been a noted grower of them for many years. You would also observe, at page 120, that Mr. Beaton thinks that it is possible to keep Camellias from setting their buds for years by too much kindness. We, ourselves, once caused about forty young Camellias to make four distinct growths in one season, two of which would cause any Camellia to go without buds that season. When a Camellia makes its growth in too hot a place, with proportionate dampness, it will not set flower-buds, if it is a healthy plant. Therefore, it depends on the health of your plants, and on the way they were forced to finish the growth for this season, whether they will yet set flower-buds before it is too late. Keep them rather dry till the end of June, and you may succeed.

DOUBLE WHITE HEPATICAS (*Ibid.*).—We do not know where they can be procured, or whether they are procurable at all.

OLD DOUBLE-BLOSSOMED FURZE OR GORSE (*B. F.*).—By all means save your double old Furze, and now is just the time. When the bloom is over with this rich, rough customer in June, cut it back as much as you please, and it will soon break again, make a fresh young growth, and on that growth will flower next May richer than ever. If you cut any large limbs of it, see it is done very carefully, and with a smooth cut. *Laurustinus* and Holly-leaved *Berberis* should be pruned, when they require it, only in May, just as they are going out of bloom, like your Gorse, and at no other time, except, perhaps, at the end of July, for regulating the shape. All the pruning for flowers must be done by the end of May, or soon after. Cuttings of the young wood of the double Gorse put under a hand-glass behind a north wall, in sand, early in July, will root as surely as cuttings of Verbenas do in a hotbed in April, and they will be ready to transplant the following spring.

OLD STANDARD ROSE (1001).—Instead of cutting away all the head, as you propose, cut only the three or four main branches close to the "stump;" and instead of grafting, rather bud on the young shoots, of which there will be more than enough, if the roots are good; cut at the end of February.

CREEPERS FOR VASES (*W. F. K.*).—You propose adopting one of the very worst systems of the present day in gardening, to put a blue and a scarlet creeper into pots seven or nine inches through, and to place the pots in vases out on the lawn. When a lady wills it, she can have a fancy stage, opposite the drawing-room windows, to roast little plants in pots on, from week to week, and my lord must supply the spit; but when a gentleman proposes to pot climbers to put into vases on the lawn, we ought to tell him conscientiously the plan will not pay; rather let the vase be filled with mould, and the climbers be planted out round the sides, and the other crops in the middle, all of them out of pots. The best red for the purpose is *Lophospermum Hendersonii*, or the red *Maurandya*; and the old purple *Maurandya* is the nearest to blue that is fit for the particular place. If the vases are of cast-iron they can be bored to let off the drainage water.

GENISTA FRAGRANS (*Ibid.*).—After flowering it should be pruned, and in three weeks after that, at this season, be repotted in good loamy soil, and be out in the open air, or in a cold pit, all the summer.

GARRYA ELIPTICA (*An old Subscriber*).—It is a bad plant for moving after it is grown to a good size, and you must be very careful with the roots. The first rainy day after the 10th of September is the best time in the year to remove it. Three weeks before that, all the young shoots on the plant ought to be cut back to one-half their length; and, in the meantime, or, rather, just now, let some of the roots be cut, and they will make more young ones time enough for the change.

ROUP.—*R. B. P.* wishes the enclosed to be inserted:—"What treatment have the different readers of THE COTTAGE GARDENER found most efficacious in the roup? The number of recoveries in a given number affected? And the usual time in which a fowl affected recovers? I think you will agree with me that some light may be thrown on this, at present, fatal and obscure disease." We shall be obliged by any information relative to this plague of the poultry-yard.

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WEEKLY CALENDAR.

M D	W D	JUNE 16—22, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
16	Th	Poplar Hawk; poplars.	29.415 — 29.384	68—40	S.W.	40	44 a. 3	17 a. 8	1 12	10	0 19	167
17	F	Elephant Hawk; gardens.	29.490 — 29.437	67—50	S.	09	44	17	1 31	11	0 32	168
18	S	Scarec Elephant; Devon.	29.576 — 29.538	66—52	S.	30	44	17	1 51	12	0 44	169
19	SUN	4 SUNDAY AFTER TRINITY.	29.750 — 29.578	69—49	S.W.	12	44	18	2 16	13	0 57	170
20	M	QUEEN VICTORIA ASCENSION.	29.780 — 29.577	69—56	S.	05	44	18	2 49	14	1 10	171
21	Tu	QUEEN VICTORIA PROCLAIMED.	29.622 — 29.541	68—46	S.W.	02	45	18	rises.	☺	1 23	172
22	W	Sun's decl., 23° 27' N.	29.745 — 29.628	68—51	S.W.	—	45	19	10 a 4	16	1 36	173

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 73.1° and 50.3° respectively. The greatest heat, 93°, occurred on the 22nd in 1816; and the lowest cold, 36°, on the 22nd in 1851. During the period 102 days were fine, and on 82 rain fell.

We cannot say, with Shakspeare's rebel, "I think this word SALLET was born to do me good," but we can say, that an enquiry concerning it has suggested to us the gathering together some of our notes relative to a very seasonable subject. It is seasonable, because, in summer, few are they who do not give a hearty welcome to "the salad bowl;" and it is seasonable, because the Horticultural Society has, at length, been led back to its prime object—utility—and shews this return to good sense by offering prizes for "THE BEST COLLECTION OF SALAD PLANTS." "Why does Evelyn call them Acetareous plants?" is the query that has led us to the subject. "It is not from *acetum*, vinegar, adds our interrogator, because such plants usually are called *acedaria*, in the classics."

With submission, we entertain a contrary opinion. The best authorities, and the best editions of these authorities, are uniformly contrary to our correspondent's assertion. We have before us one of the best editions of Pliny, and there (l. xix. c. 4,) we have it "*unde et acetaria appellantur.*" The whole passage is worth translating—"Formerly, the products of gardens were most approved, for they are always ready for use, and speedily prepared—they require no fire, and, therefore, fuel is economized. Thence they were called *acetaria*; they are easily served up." Besides, we will now quote an old translator of Pliny, "Besides, light they are of digestion; they breed no heaviness in the head; they offend not the brain, nor any of the senses; and, least of anything, make quarrel to the loaf, and spend little bread."

In those days of simple-mannered Rome, the preparation of the salad was a brief employment—for "the Roman supper, a radish and an egg" was no poetical exaggeration. Luxury, however, soon included even the salad within its intricacies and exaggerations. Columella lived in the days of the Emperors, and then even the Roman salads became imperial. "Put into a mortar—says this associate of Claudius—Savory, Mint, Rue, Coriander, Dill, sliced Leek, or, in its absence, green Onion, the leaves of Lettuce, and of Rocket, green Thyme, green Pennyroyal, and salt new Cheese. Bruise these together thoroughly, and mix with them a little peppered vinegar. Put the mixture in a deep dish, and pour over it oil. When those green herbs have been well bruised, mix with them the cleansed (skinned) kernels of walnuts, as many as your taste prefers; thoroughly incorporate with the mass a little peppered-

vinegar, and pour oil over the whole." Nor were they ignorant that a gleam of sweetness and of higher savour would improve "the herbaceous treat;" for Honey and pickled Fish (*Garum*), the counterpart of our Anchovy, are mentioned as desirable additions.

A Dean of St. Paul's has recorded, even in rhyme, that a salad artistically prepared "Would tempt a dying anachorite to eat;" and another authority has anathematized the blundering monster who neglected to bring the herbs cool and crisp to the very margin of the salad-bowl—"Twere well to mix it standing in an icehouse."

Modern authorities have been strangely neglectful and silent upon these preliminary cares. Not so were those of a previous century; and even Batty Langley, in a quarto dedicated to royalty, gives the following "*Directions for the gathering, ordering, and dressing of a Sallet.*"

"IN the choice of sallets observe,

"First, that the kinds are young and delicate.

"Secondly, that they are picked very clean from imperfect, slimy, &c., leaves.

"Thirdly, that each kind be washed separately in two clean waters.

"Fourthly, that they are well drained in a cullender, and afterwards swing'd dry in a clean napkin.

"Fifthly and lastly, that every sort be proportion'd as directed in the preceding sections, and laid singly in the dish, in such a manner, as to form a pyramidal, or other agreeable figure.

"N. B. That during the months of January, February, and March, sallets may be cut at any time of the day; but when the weather increases in heat, the best time to gather or cut a sallet, is about eight or nine of the clock in the morning, to be afterwards kept in a cool place, till within one hour before it is eaten, at which time, it should be washed as before directed, and not immediately before it is eaten, as practised by many.

"And when you are obliged to cut a sallet in very hot weather, put it into spring water for the space of half-an-hour or more, and then take it out, and order it as before directed.

"And having thus gather'd and wash'd your sallet, the next work is the dressing, wherein observe,

"First, that the oil be very clean, smooth, light, and perfectly sweet, without any sort of rancid smell.

"Secondly, that the vinegar, or other acid, be perfectly clear and fresh.

"Thirdly, that the salt be of the brightest and best refined kind, and moderately dry.

"Fourthly, when sugar is used, that it be the very best refined.

"Fifthly, that the vinegar, salt, and sugar, be proportioned to the heat or cold of the stomach, as near as can be.

"Sixthly, that the sallet be composed of such herbs as are agreeable to both weather and constitution.

"N. B. That sallets should be so chosen, as to be agreeable to both weather and constitution, as is said before, viz., those which are hot, for cold weather and cold stomachs; the temperate ones for temperate weather, and the very cool ones, for very hot weather, as well as hot stomachs.

"N. B. That sallets may be so mix'd, as to be hot and moist, hot and dry, temperate, &c., as for example, onions and cucumbers being mixed together, viz., double the quantity of cucumbers as of onions, the one being cold and moist in the second degree, and the other hot and dry in the fourth degree.

"This mixture moderates the opposite natures of both, and causes them together to be of a temperate quality, and the like of all others.

"The best dishes to dress sallets in are china dishes, on account that the oil and vinegar are disagreeable to both silver and pewter."

"The Oxoleon.

"TAKE of clear and perfect good oyl olive three parts; of sharp vinegar, lemon, or juice of orange one part; and therein let steep some slices of horse radish, with a little salt, and some in vinegar alone; gently bruise a pod of Guinea-pepper, straining both the vinegars apart, to make use of either, or of both as they best like. Then add as much good dry mustard grated as will lie upon an half-crown piece, beat and mingle all these very well together; but pour not on the oyl and vinegar, till immediately before the sallet is ready to be eaten; and then with the yoke of two new laid eggs boil'd, squash and bruise them all into a mash with a spoon: and lastly, pour it all upon the herbs, stirring and mingling them till they are well and thoroughly imbib'd, not forgetting the sprinkling of aromatick flowers that are in season, as well as thin slices of red beet, horse radish, berberries, &c."

Such were the preparatives, but modern authorities differ somewhat from this salad-dresser to George II, in their compounding of the *Oxoleon*, or Oiled-acid, for the bowl. So accurately should this be prepared, that to please some fastidious palates, we have known one invariable guest that had not an accomplishment beyond his skill in salad-making. In a still earlier day, "when statesmen shrank as Junius plied the lash," the popular salad-dresser received his guinea for ono mixing, and rolled to his toils in his chariot just before the appointed hour on which the bowl of acid, oily, green, salt, savory, and insipid, was needed for the side-board.

The judgment of the compounder of such contrarieties was not confined merely to the preparation of the *Oxoleon*; a point quite as grave and as difficult, was to apportion and select the herbs. Here, again, all modern authorities are silent; but not so Batty Langley, for he, who had a genius sufficient for the apportionment of a palace, found no difficulty in meting out the ingredients of a salad-bowl. He decrees that of *Corn Sallet*—the proportion to be mingled in the bowl "is double the quantity of any other sallet herb eaten in composition;" of *Garden and Water Cresses*, "three times the quantity of any other kind of sallet herb used therein;" of *Fennel*, "in an indifferent sallet about ten of the young shoots;" of *Lettuce*, if the sallet "be composed of three kinds of herbs, one-third part; if of four kinds one-fourth, and so on;" of *Rampion*, "when a sallet is composed of five, six, or more sorts of herbs, and of each a *Pugil* (that is, as much as is generally taken up with the thumb and two fingers), to such a sallet we generally add twelve roots, and of the seed leaves, or tender tops, an equal quantity with any other herb, Radish excepted;" of *Rocket*, "if the sallet is composed of cooling herbs, there may be one pugil or equal quantity;" of *Celery* (Sellery of Langley), "the number of roots eaten in a sallet is generally about five or six; when of other

kinds, there is but a pugil of each;" of *Sorrel*, "the usual quantity is a fourth part when the sallet is composed of four kinds of herbs, a fifth when of five, and so on;" of *Tarragon*, he observes, that if well mixed in a sallet, it gives an agreeable relish to the compound, "although some cannot endure any part of it in a sallet. When a sallet is composed of six or seven sorts of herbs, and of each a pugil, to them may be added about twenty-five large leaves of Tarragon."

Mr. Langley gives similar directions relative to many more "delectable sallet herbs," but with this we must close our list; but, as we have said, that modern authorities differ as to the desirable proportions of "the Oxoleon," we will conclude with the usual recipe thus given in verse by the Rev. Sidney Smith,—

"Two boil'd *Potatoes*, pass'd through kitchen sieve,
Smoothness and softness to the salad give.
Of mordant *Mustard* add a single spoon,
Distrust the condiment that bites too soon;
But deem it not, thou man of herbs, a fault
To add a double quantity of *salt*.
Four times the spoon with *oil* of *Lucca* crown,
And twice with *vinegar*, procur'd from town—
True flavour needs it, and your poet begs
The pounded yellow of two well-boil'd *eggs*.
Let *onions*' atoms lurk within the bowl,
And, scarce suspected, animate the whole.
And, lastly, in the flavoured compound toss
A magic spoonful of *Anchovy sauce*.
O! great and glorious!—O! herbaceous treat!
T'would tempt the dying anchorite to eat;
Back to the world he'd turn his weary soul,
And plunge his fingers in the salad bowl."

An advertisement having invited "Nurserymen, Gardeners, and others, exhibitors at the Royal Botanic Horticultural Shows," to meet, and "to receive, and make suggestions relating to the Exhibitions of 1854," this meeting took place on the 8th instant, Mr. Fairbairn presiding as chairman. Of what then occurred, we have received this report.

"The Chairman briefly explained the object of the Meeting. He had called them together, to know if they would agree to strengthen Mr. Marnock's hands in laying before the Council the result of that Meeting. The exhibitors were aware, that in order to create a greater interest in the public mind, in favour of the exhibitions, it had been mooted, that, instead of having three exhibitions of one day each, there should be three exhibitions of two days each; and Mr. Marnock would, on the part of the Council, endeavour to meet the extra expenses the exhibitors would be put to, and propose to fit up a hothouse, in which to place the orchids and stove plants during the intermediate nights.

"Mr. Fraser, of Lea Bridge, gave some further explanations about the facilities and arrangement that Mr. Marnock would make to render the matter agreeable to the exhibitors.

"An Exhibitor said, that he feared the employers of gardeners would object to so many days being devoted to showing; but one or two replied, that they had already asked the question, and their employers assented to the additional days.

"The Chairman, after an hour's discussion, put the question, when there appeared—

For two days exhibition 5

Against it 19

"Consequently the motion was negatived.

"Mr. Hoyle, of Reading, the distinguished Pelargonium raiser, then said, that exhibitors had frequent causes of complaint against the arrangements of the subjects of exhibitions, and other matters; and, therefore, he moved, 'That a Society of exhibitors be formed, there and then, to consist of exhibitors generally, to watch over their interests, and such Society to be represented by a Chairman, Treasurer, Secretary, and Committee.' He explained, in a very satisfactory manner, how this Society should act through their Committee.

"The motion was seconded and put by the Chairman, and carried unanimously. Mr. Lochner was appointed Secretary, and Mr. Fairbairn, Mr. Hoyle, Mr. Fraser, and two or three others, were appointed a temporary sub-committee, to draw up the rules, and submit them to a meeting, to be held at the same place, at the same time, on the next exhibition day at the Park.

"The Society are to embrace in their operations not only the shows at the Park, but also the shows at Chiswick, and at the South London Floricultural.

"About twenty names were put down at once, and a subscription of 2s. 6d. paid to meet expenses.

"Thanks were voted to the Chairman for his impartial conduct in the chair, and the meeting then broke up."

Upon the Society thus instituted, we have not yet sufficient information to enable us either to form an opinion of its desirability, or of its probable consequences; but one question—and a startling question it is—suggests itself, and for which we must ascertain facts that will enable us to furnish a trustworthy reply. Are "the arrangements of the subjects of exhibition, and other matters," so unfair at our great Horticultural Shows, as to render such a protective Society necessary? If it is necessary, then is it the severest censure that was ever passed upon the managers of those Horticultural Shows.

THE following letter is from Mr. W. B. Tegetmeier, of Tottenham, Middlesex, who, as our readers know, is devoting his attention to the almost unexplored mysteries of *Poultry Diseases*.

"I have been, for the last three or four weeks, so inundated with dead and diseased poultry, often four or five per day, and letters, usually, by the half-dozen, that I must, of necessity, come to some other arrangement, for I find the time required to examine all that arrive is really very considerable, and I may add, the cost of carriage is very considerable also; as though most (*not all*) are paid to London, there is the carriage to Tottenham afterwards, always 8d. or 1s. At the same time, I should be very loath to give up receiving the subjects, as I have derived much most valuable information from their examinations. What should you think of such an arrangement as follows?—

"Letters, asking advice, to be answered through THE COTTAGE GARDENER, as heretofore.

"Letters, asking advice by the post, to contain a stamped and directed envelope, and to be answered gratis.

"Dead fowls to be accompanied by a fee of *five shillings*, for the time and trouble taken in their examination.

"Diseased fowls, also, to be charged for, *five shillings* each, and sixpence per week for keep and medicine.'

"When I inform you, that on Saturday I was two hours engaged in cutting up *inedible* poultry, and that this week, to Wednesday, the arrivals have been five dead, and two living, you will, I trust, not imagine that I am actuated by mere motives of greed in making such a proposal; but, unless the subjects are somewhat lessened in number, and the carriage wholly paid, or I am somewhat reimbursed for the time I am obliged to devote to so large a number, I shall be obliged to give up receiving them. I may mention, that many persons have offered to pay me for my trouble, but I have always declined receiving any fee, and should do so now, but that the number has become so large. In fact, the railway porter's ring and announcement of—'Please, Sir, here's more dead fowls,' are stereotyped."

This proposition we think quite unobjectionable, and no one who values his fowls will object to charges so reasonable as barely to secure Mr. Tegetmeier from actual loss.

COVENT GARDEN.

THERE is very little waste in a London market-garden. Everything is turned to account, and sent to market for something or other, to be sold for what it will fetch. There is at present an article called *Greens* offered for sale, and which some buy believing they really are, and devouring them with all the relish with which they would Greens properly so called. But, after all, they are but Cabbage plants which have been left over after the gardener has had what he wanted from them, and which, rather than throw to a dung-heap, or dig into the ground, he converts into hard tangible coinage at the markets. Vegetables of all kinds are now coming in very plentifully. *Cabbages* have improved very much within the last week, but, like too many in a higher scale of creation, they have very little heart. *Lettuces* are improving very much, and are now rather plentiful—so much so as to be pretty common at the greengrocers' stalls. *Radishes* are very abundant. *Rhubarb* is now making only 2s. per dozen bundles. *Asparagus* is also plentiful, and may be bought at 2s. 6d. to 3s. 6d. per 100.

The specimens of *Forced Fruit* are very fine, particularly the *Grapes*, *Peaches*, and *Nectarines*. The first-named make from 5s. to 10s. 6d. per lb., and the latter 2s. per dozen. *Apples* are very short, and, on account of the indifferent quality, little in demand. Besides, since *Rhubarb* has come in so plentifully, it has quite superseded the use of culinary Apples at this season.

Flowers are most abundant, both of garden and house sorts: to enumerate all that may now be had would be to give a list of almost everything which is usually met with in gardens. During the winter months, when flowers are rare, it is interesting then to see what the ingenuity of the gardener can produce, but now all that interest is gone.

H.

BULBS. PROPAGATION AND CULTURE OF HIPPEASTERS.

(Continued from page 180.)

I HAVE said that I would write on the culture and propagation of these beautiful bulbs, as if to an amateur now beginning to grow them for the first time. I shall suppose that he will go to the nurseries next week and choose his bulbs; get them all home; treat them for the remaining part of the season as I direct; dry them, and put them away in safety for the next winter; begin with them next spring, about the time I shall specify; when they are in flower, I shall select for him which to cross; and when the seeds are ripe, I shall put him in the easiest road to rear the seedlings to a flowering age. Then, before we part, he shall have a little insight as to the selection of his best seedlings; and, last of all, if there is room, we shall follow some of his own best crosses to the exhibition tables, where they will astonish the critics, and pay for all the pains and outlay from first to last.

The first thing to be considered, in making a selection of bulbs like these, which ought, invariably, to be in a growing state, if not in flower, at the time of purchasing them, is the state of the leaves, as it is by them only that we can determine the health of the bulbs.

The leaves of bulbs that are in a healthy condition are glossy green, of some tint or other, free from dark or brown spots, or blotches, from top to bottom. Several of the original species of *Hippeasters* have a milky-green tinge (glaucous), and very many of the crosses have a purplish hue towards the bottom; but, in all cases, there should not be the least appearance of a spot or rusty tinge. The first indication of a diseased bulb, in this genus, is a rusty appearance on the underside of the leaves, running along the margin or edges—a malady which soon spreads, and for which I am aware of no known remedy. All that I am sure of is, that it is not hereditary. When this rustiness appears on a favourite bulb, the flower should be crossed with another flower that is the nearest to it in colour and shape; the seedlings will then, or, at least, many of them, be as gay as the diseased plant, and quite free from the disease. This I am quite certain of, and I could never make out that this, or any constitutional disease, is infectious.

Hardy greenhouse *Hippeasters* will endure as much heat as a Pine-apple, without appearing to suffer from it; hence the very erroneous idea that they are stove plants;—hence, too, the secret about forcing them to flower in the dead of winter, or causing them to do so almost any month in the year. Gardeners take advantage of this disposition, and apply strong, moist heat to the seedlings, from the day the seeds are sown, till the young bulb comes into bloom at the end of eighteen months or two years. Whereas, if seedlings are allowed the same treatment as flowering-bulbs—free pot room, and alternate periods of growth and rest—they would not flower under double the time, at least. Nurserymen, again, make the best of this feature by growing their young and old plants in strong heat and clear light, in heated pits, just like the Pine-apple, so as to bring the young plants earlier to market, and to get the old ones well-ripened during the height of the summer. I have seen Mr. Appleby do them this way at the Pine-Apple Place Nursery, year after year, with great success. There is a large stock of them in that nursery, the best, indeed, that I know of about London. The Messrs. Knight and Perry, also, had a good assortment of them at the Exotic Nursery, in the King's Road, Chelsea; and now that this celebrated nursery has passed into the hands of Mr. Veitch, jun., a chip of the old block, from Exeter, I hope he will be as fortunate with bulbs as he

is known to have been with the newest and best plants that he and his father introduced from all parts of the world. Messrs. Garraway and Co., of the Bristol Nursery, have also been at the top of the list for a generation, both as good growers and as successful breeders of them. I also knew Mr. Colville's collection, when he had more of them than all the nurseries in Europe could turn out. But of all the nurserymen and gardeners, Mr. Tate, of Sloane Street, was by far the best biographer of the original kinds. He was above Sweet, and only second to Dr. Herbert. I do not know a single individual besides who was ever aware of their hardihood: I mean Mr. Tate and Dr. Herbert; and it is necessary that I should say so, as, in all probability, when people go to the nurseries to select, they will be told that I am crazy for saying they are anything but stove plants, as most nurserymen of the present day firmly believe them to be.

Knowing all this, I must own that the nurseryman's treatment must be carried through the first summer, or all the time they are grown after coming from the nursery. If we buy them in June, July, or August, a close pit, without artificial heat, will be the best for them, as that can be kept hot and moist enough for any plant during the time. Towards the middle or end of September, at the farthest, I would cease watering them altogether, although the leaves were as green as a leek; but I would not then expose the leaves to the sun, as that would be too premature; the pots should be turned on their sides, with the leaves falling away from the sun. A lateinery is always the best place to dry-off bulbs late in the autumn; the top shelf but one in a lean-to greenhouse, however, will do very well, the leaves being allowed to hang out under the stage. The best criterion of the situation is, that the leaves keep green for a month, or longer, after water is withheld, on the supposition that they were green at the time of being put to rest. If any of these bulbs were in good growth, from the beginning of April to the middle of September, I never found any injury from putting them to rest at a moment's notice, although the leaf was full of sap and quite green. For the next winter, the bulbs are safer in the pots; all that they require is perfect dryness and exemption from frost; but, I believe that they, and all other bulbs, when resting during the summer months, are the better for having the pots—not the bulbs—exposed full to the sun.

About the end of March, I would begin with such bought-in bulbs on my own plan, and as I meant to go on with them. Before that time I should know what kind of earth they were in. If it was at all light and crumbly, or had any peat or leaf mould in it, I would shake the bulbs out of it at once, and without ceremony. Nothing will keep them in good health longer than strong yellow loam. I would cut off any black, or brown, or yellow root. All the kinds have white roots if they are healthy; and every morsel that was otherwise coloured I would cut off before potting into the fresh soil; and if I was not in a hurry to get through with them, I would put aside such as had their roots cut, for some days, to give time to the wounds to dry over; or, if I potted them at the time, I would keep them separate from the other pots, and not water them for a week. Either plan is better than to cut, pot, and water at the same time. It is not a good plan, however, to repot these bulbs when they are at rest; it is only done in a case of necessity like this. The right time to pot them, under a regular system, is when they have done flowering, or very soon after, and, of course, all the soil could not then be shaken from their roots without damage.

I do not like half so much drainage for strong bulbs as we give to other plants; it occupies too much room,

and yet all bulbs require the most perfect drainage. The way to effect it is to make the hole at the bottom of the pot so much larger,—a hammer, or any piece of iron, will do that,—by chipping off a little and a little round the edges of the hole. I have often made a slit across the bottom of the pot from rim to rim, not wider than the hole itself, and that is the most perfect way of draining without much crocks.

The first potting, after shaking off all the soil, ought only to be a temporary shift, and only to last until the bulb is in full growth in June; therefore, take any small pot that will just hold the roots and the bulb, and nothing to spare. One or two crocks will then do over the hole, and the bulb may be only half buried in the pot; water immediately, and very little more water will do till the leaves come, or else the blossom-buds; some kinds put up the flower-scape first, and some the leaves, and they prefer a dry, warm air just at this critical time, and to be as near the glass as possible. Any of the crosses that are known to be from the hardy strains, or from one hardy parent in the cross, are sure to succeed on a greenhouse shelf, near to the glass, until the flower begins to open, when the drawing-room is the best place for them. Warm, dry air, and not to be full in the sun, is the thing for all, and every one of them, while they are in blossom; and if the room is not too hot, they will keep in flower longer in it than they would in a greenhouse or conservatory. When the flowers are over, the stalks or flower-scape should be cut to within three inches of the pot, and the remainder allowed to wither before it is pulled off. It is a very bad plan to cut these stems down to the bulb, as if they decay or damp the bulb will suffer. After this, and understand the time to be the height of summer, remove them to a close pit, and let the sun raise the heat to 90°, before you give them air; with sun heat from 70° to 90°, the pit must be kept quite damp, by pouring in water between the pots, and by the syringe in the afternoon, when the pit is closed for the day. They will require no shading from the sun with this treatment, or if they do, and the leaves droop, it is a bad sign. After ten days or a fortnight of this change they are fit for final potting, and if all goes on well, this potting ought to last them from seven to ten years, and as much longer as they are in health and blooming order; so that there is very little trouble with Hippeasters, except the little at first.

By keeping them cool in February and March, and setting them up to grow from the middle to the end of April, there is not a single Hippeaster in England that could not be grown, flowered, and ripened in the said pit by the end of September. An upright, No. 32-pot is the right size for a single flowering bulb, and at the final potting the whole bulb should be just covered, and nothing more.

The winter treatment is the same, year after year, and keeping them cool in the spring is in order to keep the stove ones back till the season is more advanced.

SPECIMEN PLANTS.—After a while, many, indeed most of them, make side-bulbs or offsets, and to get a bulb into a specimen size, it should not have less than four offsets at a flowering age, and if more all the better, if they have been so thinned at first that all stand at regular distances from one another. As they progress to this size they will require larger pots, and the sizes must be judged of from the diameter of the batch; nothing looks worse, or is more hurtful to bulbs, than putting them in large pots—there should never be more than half-an-inch between a large bulb and the side of the pot, the same with a cluster of bulbs in this specimen fashion. I am not so sure about the proper depth. I used pots twenty-two inches deep, and twelve inches in diameter, for seven years, with *Gladioluses*, *Alstromerias*, and a few other plants, and they all

seemed to like it. I think all bulb-pots ought to be deeper than we have them, that the holes in the bottom should be much larger than the usual run, and that much less materials for draining should be used. I have heard it objected that clusters of side-bulbs do not ripen their leaves so soon as the old bulb, in the middle, but I am quite sure all that is groundless. *Hippeastrum reticulatum*, *Aulicum*, and *Solandraflorum*, and the first generation of crosses from them, would keep green all the year round, if they were in the stove, and had water given to them; but they, too, and every member of the family, may safely be put to rest by withholding water from them after the end of September, whatever stage the leaves may be in, provided they were grown well all through the summer; and it is the same with these clustered specimens. I would allow them to be kept green no longer than the sun was high enough to ripen them. I have also flowered them from November to March, and let them go to rest by the end of May.

I called at Dropmore, at the end of May, 1831, to look out some rare kinds of this family, and found every one in the place piled up under the stage of the greenhouse, all dry, and leafless; there was a waggon-load of dried pots there at the time. Mr. Bailey was gardener there then, and I recollect, he and a gardener in the neighbourhood told me it was a sight to see forty-eight pots of *H. vittatum* alone in bloom at the same time, the February preceding my visit. This same plan of flowering them during the winter has been revived again in our books within the last few years. They were also flowered in the winter by Mr. Sweet, in Colville's Nursery, more than thirty years ago. He, too, put them to rest by the end of May, shook them out of the soil, and placed them on high shelves in the stove, and compelled their leaves and roots to shrivel. In October, and on till Christmas, he had them fresh potted, as the flower-buds or leaves began to move. The stoves were kept much drier in those days than they are now, and the summering on the shelves of a dry stove was as safe as our wintering is now in dry mould in pots.

CROSSING HIPPEASTERS.—I never knew a Hippeaster that would not seed, and I never found one of them that would not cross with any other in the genus; but they are much influenced by soils, and the kind of treatment they receive. Dr. Herbert said, that the pollen of a different kind would, with him, invariably subdue the effects of the natural pollen, but I tried his plan for four years, with a great number of them, without verifying the same result in one single instance. The anthers do not open before the flowers in this genus, therefore there is no difficulty about the pollen, and all that is necessary, is to cut off the natural anthers before they burst, and apply the pollen from another kind; the seeds are ripe in about six weeks after that, and they should be sown the day they are gathered.

RAISING SEEDLINGS.—Any light soil will do to raise seedlings in, and a hotbed is the best place. They are up in less than three weeks; and a month after that they are fit to be transplanted into nursing-pots. Some pot them singly into small pots, and give them three more shifts before they flower; but when one counts them by the thousand, or even a few hundreds, they become troublesome in single pots, as two-thirds of the best batch are seldom good enough to keep in a choice collection. The way I used to deal with them was to pot them into No. 32-pots from the seed-pot, putting in a row all round the pot, and just two inches apart, and never giving them any more room till they bloomed; and I have had them often so jammed together by their growth, that the bulbs were flattened on both sides, and I think that caused them to flower sooner; and I recollect one year, in particular, I had about fifty pots

crowded with them, and having had a new tank-bed, I planted them out, balls entire, in rich mould, and they teased me much, growing away like rushes, and the half of them did not flower the third season, when I broke up the colony. Seedlings of all of them will keep green, winter and summer, if they have heat and moisture; and even under a greenhouse and close pit treatment it is better to water them all along till they do flower.

I regret that I cannot give a single name by which to ask for them; every grower has his own seedlings, and his own particular names; but we would print any authentic list of them.

D. BEATON.

LUCULIA GRATISSIMA.

THERE are few who, having seen, do not admire this beautiful plant, when well covered with its terminal bunches of pink rose-coloured flowers, not more gratifying, however, to the eye, than they are refreshing from their odour. Yet, comparatively, seldom does this plant figure in collections, which is the more to be wondered at, as it will bloom either when young or old,—as a tiny thing with one shoot, or as a large, bushy shrub. This we consider to be partly owing to two causes, the opposite to each other; namely, treating the plant continuously as a native of the tropics, or, on the other hand, keeping it always as cool as we would do a hardy Cape Heath. Under the latter circumstances, patience will have to be exercised before a fine specimen is secured; and, in the former, growth is too apt to be made at the expense of flowering. When a speedy and a satisfactory result are alike desirable, it is often best to adopt a middle course, and give heat when growing, and coolness when resting; and, setting aside the true economy of this middle course, it seems to us the most similar to what the plant enjoys in its native home, on the hills of Silhet and Nepaul.

Eighteen years ago, I had more to do with this delightful plant than ever I have had since; but the notes made then have been confirmed by subsequent practice and observation. It is alike beautiful, whether grown as a pot-plant, or planted-out in the bed of a conservatory. Many readers, as well as myself, have been delighted with the fine plant in the conservatory of the Horticultural Gardens, Turnham Green. Keeping in view, however, what I have said about adopting a middle course, I would never allow planting-out until the plant has attained a considerable size under pot-culture.

Like many other plants, it will thrive under roughish treatment when of some age, though it would make small progress under that treatment when young. This is the more necessary to be mentioned, as, in these days of competition, nurserymen are obliged to hasten forward into *size* even comparatively hardy plants; and ignorance or inattention to this is the cause why the beautiful, healthy-like plants received, so soon become wretched and almost leafless.

As a general rule, unless you have the word of your nurseryman to the contrary, make up your mind that all young plants from a nursery, especially if cheaper than usual, will want a considerable amount of nursing before you can expose them to anything like rough treatment. I recollect hearing a tradesman, expatiating on the hardness of this very plant, describing what Dr. Wallich said about its growing in very exposed places on the mountains of Nepaul, where the valley or table land was itself so high, that in a latitude of 27°, the climate of Europe was realised; and all this I believe to have been perfectly true, or nearly so; but, with the exception of the specimen they were then looking at, I rather think that the whole of the young stock were at that moment enjoying a close atmosphere saturated with moisture, and a temperature ranging

from 75° to 80°. Now, just think of the effect produced on a plant packed up from such a coddling place, and, after travelling many miles, transferred at once to the shelf of an open, airy greenhouse. I blame no one. The nurseryman grows to sell; the amateur grows to keep and enjoy; and if not so initiated as to guess pretty correctly, by the appearance of a plant, as to the treatment it was previously experiencing, he had better not be above asking for information, and few, if any, nurserymen would refuse to give it. There need be no mistake here. The dealer, whose goods are found the most serviceable, will, ultimately, command the greatest amount of custom.

The general applicability of this digression will excuse its introduction here. I must, however, in consequence, make short work of the main points of the culture of the *Luculia gratissima*.

Propagation.—Supposing that you, or a neighbour, have a plant that has been in bloom some months; it will now be on the wane, and will soon want cleaning and pruning; the amount of the latter must be in reference to the present size of the plant, and the size you wish it ultimately to be, taken in connection with the fact, that as the flowers are produced chiefly on the points of young shoots well ripened, the object in pruning is to save as many buds as you will want shoots, and can depend on these buds starting.

Well, then, supposing these buds have started, and have grown three inches in length, slip them off close to the stem with a razor-like knife, and, with scarcely more preparation, these constitute excellent *cuttings*. From February to June is a good time for inserting the cuttings, and the sooner done the better the chance of a good plant before winter. If such cuttings are not to be had, select a piece of a shoot, neither soft nor hard, cut through at a joint, and leave a joint or two with the leaves on above, removing the leaves at the base of the cutting.

In either case, insert the cuttings in silver sand, over sandy peat, and the pot three-parts filled with drainage; water, cover with a bell-glass, and shade from bright sunshine until the resting processes are going on. Now, with respect to *position*, &c., the two kinds of cuttings require a slightly different treatment. The little slips taken off close to the stem will delight at once in a moist, warm atmosphere, and a briskish bottom-heat, such as can be found in a Cucumber or Melon frame. These from the young shoots, cut into parts, will require to be kept rather *cool* for ten days, and then be plunged in the bottom-heat. If, in both cases, the plants were growing in a high temperature, the treatment may at once be identical; but it will be best to make the difference when a plant, in one case, is merely commencing to make its wood, and that wood, in another case, is taking the first step towards ripening. In either case, as soon as struck, let the cuttings be potted off in small pots, and be plunged again in the bottom-heat, and if not after Midsummer, if there is only one stem, stop it, to obtain two or three.

Choosing Plants.—As many would prefer having a nice little plant at once, choose one more distinguished for health, for having uneramped roots, and absence of stuntedness, than for its general size. As economy seems to be a marked feature with the readers of this work, we would advise them strongly to commence with a young plant. As the treatment for that, if procured before Midsummer (and the earlier the better), will be the same as for a young plant raised from a cutting early, we will not separate them in the general details necessary.

Soil.—Peat and loam, in a rough, sweet state, broken by the hand, and enough of little bits of charcoal, broken pots, and silver sand, to keep the soil open, will grow them admirably.

Position, Temperature, &c.—A cucumber-box, or a melon-frame, is just the place for a young plant in the spring or early summer months. Time is thus gained. A bottom-heat of 75° to 80° , and a top-heat of 60° , with 15° rise for sunshine, will suit it admirably when in that state. Growing must be everything that is thought about. Stopping has been already referred to. Towards the end of July, the bottom-heat must be discontinued, and more air given, and as much unchecked light as the foliage will stand. Increase the air, and expose fully in mornings and afternoons in August. By the end of that month, while the pot is protected from the sun, the branches should be fully exposed to its influence, never putting on the sashes unless in heavy rains. By the middle of October, the plants should have an open, sunny place in the greenhouse; and, during the winter, an average temperature of from 40° to 45° will suit them. If thus grown, and exposed in the previous season, every shoot will have its flower-bud in embryo, and thus a higher temperature at any time will cause it to be developed. As a forced plant, or as a denizen of the stove at that period, it will bloom in winter, but the colour will not be so bright as in summer. An average temperature of from 50° to 60° seems necessary to the free opening of its flowers, and, therefore, when not forced, it will bloom naturally in the greenhouse when the lengthened days give the requisite temperature. When kept in a greenhouse, after it is several days old, care should be taken, after it blooms, to prune it a little, and then encourage growth by keeping the plant warm and moist there, or by giving it these requisites in a close, cold pit. The great thing is, first, to secure growth, then the ripening of that growth, and then blooming is certain. The winter season should be viewed purely as a season of rest. The less growth then, the more likely is increased temperature to bring flower-buds along with it. During growth, and when starting into bloom, the syringe should be freely used: it promotes health, a moist atmosphere, and keeps the red spider at a safe distance. When a plant is from three years and upwards from the cutting, it will do admirably planted-out in a conservatory. In a short time it may be pruned freely, keeping in mind to have plenty of shoots, but not too thick, or the individual masses of flowers will be small. When thus planted, the same principles of culture will be kept in view. The heat of April or May will bring out the blossoms; the warmth of summer will cause the growth to be made; and, for want of the means of removing the glass in autumn, the roots must be allowed to get rather dry, and thus the wood will be consolidated and matured. I may also mention, that when kept in a greenhouse in pots, it must not have much water in winter. A little weak manure-water will be of service during the growing and blooming periods.

I find I have forgotten to say anything of *shifting* or *repotting*. Beginners with small plants had better use small shifts and often. With bottom-heat, and due attention to watering, &c., few things grow more vigorously under a large shift, such as transferring from a four-inch pot to an eight-inch pot. A pot from eight to twelve inches in diameter will grow a nice little specimen; and where room is an object that would be a good size to keep them to. With oldish plants, the best time to shift is when growth is proceeding freely after flowering and pruning. The old soil may then be gently shaken away, the roots slightly pruned, and the plant be repotted in a similar sized pot, kept close and shaded for a few days afterwards, and syringed often to prevent evaporation.

R. FISH.

THE PINK.

PREVIOUS to giving a select list of this my peculiarly favourite flower, I shall, as briefly as is consistent with usefulness, give a few hints on its culture. I am happy to find it is becoming a favourite with the public generally, which may arise from the ease with which it can be cultivated and propagated, and because it is the hardiest of all Florists' Flowers. These favourable points recommend this lovely, fragrant flower to every one possessing a garden at a moderate distance from the smoke of large towns. Then, besides these accommodating qualities of easy growth and easy propagation, the price of good varieties is a passport of favour that few other Florists' Flowers can boast of. The very best kinds may be had for from 9s. to 12s. per dozen, thus bringing it within the means of a large circle of the lovers of flowers who have a garden.

Propagation.—The Pink may be propagated in the same way, in every respect, as the *Carnation* and *Pico-tee*, that is, by seed, by cuttings, or, as they are technically called, by pipings, and by layers. The last-named mode, however, is rarely resorted to, because this flower roots so freely by pipings. I may just mention, that the best time for putting in *pipings* is the month of June, towards the middle or latter end. By striking them thus early, they have time to become strong, well-established plants, fit for planting-out early in the autumn; and, by being planted thus early, they make strong plants before the winter sets in, and are, consequently, less liable to be drawn out of the soil by frost. It is a great recommendation that the Pink requires to be grown in beds, in the open air, thus saving the expense of pots, stages, frames, &c., which we are obliged to use for the *Carnation*.

The Seed should be sown on the same principles as other Florists' Flowers; that is, from such as are as perfect as possible. It should be gathered as soon as it is ripe, be laid in the sun for a few days to cause the pods to open, and then be cleaned and kept till March. Sow it in shallow boxes or pans, or on a warm border; and as soon as the plants are large enough, plant them out where they are to bloom. They will all bloom the succeeding season, and the good ones (if any) should be named, propagated, and treated like the old-established varieties. As they are so hardy, even a cottager may raise seedlings, and is just as likely to obtain good new kinds as the most distinguished florist, provided he takes due care in selecting and saving the seed. The only covering the Pink requires is a mulching over the beds during severe frosts. I have found decayed leaves a very effectual one, as is short litter, not too much decayed. This covering I allow to remain on till the flowers are expanded; it shelters the roots from the heat of the sun, and prevents the dry weather from acting upon the soil. To prevent too much damp in wet weather, it is a good plan to give the beds a rounded form, highest in the middle, and sloping off to the sides. This shelters them from the ill effects of heavy rains, keeping the soil only moderately moist.

No weeds must be allowed to advance beyond the seed-leaf; and great attention must be bestowed in destroying snails, slugs, and wireworms, which pests are quite as destructive, even to this hardy flower, as to *Carnations* and other flowers. The green fly, in dry weather, sometimes attacks them, but may be destroyed with Scotch snuff, or by syringing with tobacco-water.

Shelters.—When in bloom, to preserve the flowers, it is necessary to shelter them from rain, wind, and sun. Hardy though this flower is, it is sadly tarnished and spoilt if exposed to these destroyers of its bright hues. The bed may be covered with hoops and canvass, or, what I prefer, parasol-formed caps, such as I described lately for the *Carnation*, may be used. I like these

latter best, because, when they are used, the plants receive all the benefit of gentle showers of warm spring and summer rain, which keep the plants clean and healthy, and prevent the attacks of the red spider.

The Pink, Carnation, and Picotee, as treated by the scientific and painstaking florist, are little more than biennial flowers; that is, two-year-old plants, the first year making growth of plant, and in the second, growth of bloom. After the bloom is over, the layers and pipings taken off, and seed saved, the old plants are generally thrown away. Florists, from long experience, have proved that the old plants, however well cultivated, scarcely ever produce perfect flowers. This point every grower intending to exhibit, or to grow good flowers only for his own gratification, should attend to, and never depend upon two-year-old plants for that purpose. The old plants, however, need not be thrown away, but as soon as the bloom is over, all such as are not intended to seed, may be taken up carefully, the roots partially pruned, and then the plants may be planted in the common border. If inserted a little deeper, new roots will soon be formed, and dense plants of considerable size will be the result. If there is no room in the cultivator's garden, they would be highly acceptable to such gardeners or cottagers as have no wish to become florists.

T. APPLEBY.

(To be continued.)

CONIFERÆ.

(Continued from page 165.)

PROPAGATION: *By Seed*.—All the common kinds of Firs, such as the Larch, the Spruce Fir, the Scotch Fir, the Balm of Gilead Fir, the common Yew, and, in fact, all the more common species, should be sown in beds in the open air. A light, open, sandy soil should be chosen for that purpose. If it is not so naturally, it should be made so by adding sand freely to it. If it can be procured easily, a free addition of sandy peat will be very desirable and useful. The beds should be prepared in the autumn, by digging and mixing the materials, leaving the surface in as rough a state as possible, so that the frost may act upon, and pulverise the soil. The cones should be gathered as soon as the seeds are ripe, which may be known by opening one or two, and if the outer coat of the seed is of a dark brown colour, it is then fit to gather. This generally happens in September or October. If gathering be deferred much later, the cones will open and shed the seeds. When gathered, the cones should be carried home, and as many kinds have the seed very much secured in the cones, so that it is difficult to get it out, it is necessary to lay them in a heated room, to cause the cones to open their scales and let the seeds drop out. I remember, when very young, having fine sport in excursions into the woods to gather Larch and Scotch cones. When we got a sufficient quantity they were placed upon the drying-floor of a malt-kiln, and there they laid long enough to open the cones. They were then spread thin upon a boarded floor, and the labourers thrashed them with flails, such as they used for thrashing corn. By these means the seeds were separated from the cones, dried, and put away till the sowing time arrived. The month of April is the right time for this operation. The ground will then be in fine condition; it should be levelled and forked over; the walks set out, and the surface-soil, to the depth of two inches, drawn off into the walks with a rake; then sow the seed rather thickly, and cover it in with the soil drawn off on each side into the walks; this should be made very fine before it is laid upon the seed; half-an-inch will be quite thick enough. Previous to laying

it on, let the seed be gently patted down with the back of a spade; this levels it, and secures it from being disturbed out of its place by spreading the soil upon it. Should the weather be dry, it will be necessary to water the beds, but it must be applied very gently, or it will harden the surface so much as to prevent the plants bursting through it. After they have made their appearance, they will require no further care, excepting weeding, till the following spring, when they should be transplanted into nursery rows in the usual way.

The more rare species, and also imported seeds of such kinds as *Araucaria imbricata*, the *Deodar Cedar*, &c., should be sown in boxes or pans, in a light, sandy compost of loam and peat, and placed in a heat of 65° till they grow. They should then be removed into a cold pit, kept pretty close for a time, and gradually hardened-off till they are large enough to transplant singly into small pots. In their young state, these rare kinds should not be planted-out at once into beds in the open air; it is safer to put them into small pots, and shelter them in frames or pits for the first year. They may then be planted-out in nursery beds, in a sheltered situation, and kept there till they are planted in the place where they are to remain for life. I am no advocate for keeping them year after year in pots till they attain a considerable size. If they are so managed, the roots become twisted round the sides of the pot; and when planted-out for good are always liable to be blown down with heavy gales of wind. It is much better to have them planted-out in nursery-rows, and have them transplanted every other year, placing them at wider distances as they grow larger. By these frequent removals they form numerous fibrous roots, and can be removed safely, even when a considerable size. The best managing nurserymen practice this mode, not only with Conifers, but also with all kinds of evergreen shrubs, such as Hollies and Laurels, and with most perfect success. Such oft-removed trees scarce ever fail when finally planted where they are to grow into trees and large shrubs.

There are some kinds of Conifers that produce very large seeds; these should be sown singly, in small pots (the *Araucarias* are an instance); in these pots they are safe from the danger of transplanting, and can be easily transferred to a larger pot as soon as the roots reach the sides of the first pots. This point must be carefully attended to early, or the roots will become matted and twisted, and thus hinder the future progress of the trees. This repotting will carry them through the first winter, and encourage their growth greatly. Early the spring following, they should be planted-out, even if they require a temporary shelter from late spring frost. This shelter will be sufficiently afforded by turning the pots over the plants whenever there is the least appearance of frost. This may appear a troublesome affair, but precaution like this is always safe, and the trouble is nothing compared with the safety of such valuable plants. I recommend early planting, chiefly to prevent what I have a great objection to—the matting of the roots round the sides of the pots. It might be objected, why plant so early? I answer, because the roots grow strong and quickly as soon as the weather becomes mild in early spring, and thus a very few weeks' neglect does much mischief. Therefore, I say again, plant-out in nursery rows early, and shelter the plants from late spring frosts.

T. APPLEBY.

(To be continued.)

WATERING—ITS USES AND ABUSES.

It has been often and truly said, that our best directed efforts at mixing and preparing the various composts which many plants require often come short of the

"natural material" it is intended to imitate. So nicely does Nature mix and balance her ingredients, that our crude mass of discordant substances forms a poor substitute for the real soil itself; and even our best agricultural chemists acknowledge their inability to compound a material combining all the fertilizing qualities of a good alluvial loam in anything like such a good condition as the same compound is to be found in many situations, "ready mixed and prepared for use." So difficult is it to confine all the volatile substances of which a handful of dirt is said to be composed, that the late Mr. Rham, than whom it would be difficult to find a higher authority, admitted the possibility of some of the most important agents to fertility escaping while being subjected to analysis, so as to have a false conclusion founded upon those remaining.

Be this as it may, it is not my purpose to inquire; but I deem it right to mention it, as having some analogy with another subject to which this chapter is devoted—I mean, the application of *water* to plants, as the agent for supplying them with the food of which they are supposed to be in need; and how far we may be mistaken in our idea of such food. As the present season is one in which the water-pot is put as much in requisition as any other, it behoves us to be careful in using an agent so critical; for though it cannot but be admitted that much good results from its use in many cases, yet there are others where a positive harm may take place from its misapplication; and of this it is my interest to warn the inexperienced.

As water enters very largely into the composition of everything having vegetable life, and more especially so with those of a culinary or edible kind, it is important that no lack of that necessary agent be allowed to check the growth, or frustrate the purposes of the intended vegetable. Then comes the question, what can we do to administer to its wants? Pouring on a deluge of water at a time when the other agents in connection with that fluid are either dormant, or otherwise incapable of performing the functions assigned them, must evidently be bad policy; for, besides the plants being injured by the application of water, very often of an improper kind, that genial moisture which rain imparts to the atmosphere can never be tendered them by any out-door application. When watering is performed under unclouded sunshine, or dry, withering winds, the evils above are sure to happen; besides which, it is much aggravated when water of an improper kind is used. We all know that rain-water, by its being for some time suspended in the atmosphere, becomes so thoroughly charged with it, that it carries to the ground certain portions of the air it has become possessed of, consequently, such aerified water is bulk for bulk lighter than ordinary well-water, and at the same time it is divested of many of those component parts which well-water is impregnated with.

Now, though some description of well-water may be what is called "more agreeable to our palate," for what little we require of it, still, the water contains within itself the elements of death to plants; and though it rarely happens that such an event occurs, yet its prevention is more due to the counteracting powers of the soil, &c., than to any merit in the liquid used; for, besides the fact of well-water being several degrees colder than rain, or pond-water, and so acting as "a retarder," it is likewise hurtful from the pernicious matters it contains; drawn from a greater or less depth, it is sure to be more or less impregnated with the substances it has been in contact with, which are often of a kind highly injurious to vegetation, if not absolutely poisonous.

It would be wrong in us to affirm that a plant in a pot, languishing for liquid food, would be better without such water than with it; yet, something might be

done to secure the use of better, or, it may be, remedy that which is the only supply. Hard well-water is much modified by exposure to the atmosphere; therefore, ponds, basins, or troughs, are used to give it the necessary exposure, and all three appliances must be adopted where much has to be done by water of the kind mentioned above. This, however, is not always thus effected; for it sometimes happens that rain-water absolutely turns hard in a tank; and that of some ponds is equally so, though deriving their supply from the same source. The reasons in both are the same; some ingredient in the composition of the tank, or in the bottom of the pond, imparts that noxious principle to the water, which, under the vague, but not improper, name of "hard," we give to water that such substances as soap will not readily dissolve in. We have seen a tank turn all the water hard that entered it for many months; but then it was the rawness of the mortar, and other materials which it imbibed, that caused it to be so, added, perhaps, to some similar saline bodies it received from the roofs that collected it. Pond-water may be hard from the same cause, *i.e.*, the mud, or material, at the bottom might have the effect of turning it so; or it might have drained from ground that imparted that property to it. There are many descriptions of soil that will cause this, as may be known by the hardness of certain streams; and if proof were necessary of the evil effects of such streams or ponds, it is only necessary to look at the vegetables which clothe their banks—a slight comparison will tell which of the two is most relished by the plants which delight in such places; we mean, plants that grow in shallow water, and on the edges of rivers. Where well-water must, of necessity, be used, limit the quantity to the least that can possibly serve the purpose; and this may be done with out-door plants to a much greater extent than is often expected, for plants so growing are not so much hand-fed as those in pots, or some similar confined quarter.

We may next observe, that all "over-watering" is bad, especially when done with cold water of an improper kind; and whatever may be the difficulties in obtaining fine soft water, these difficulties had better be encountered than trust the well-being of valuable plants to the tender mercies of a fluid strongly impregnated with some mineral substance, better calculated to destroy insects than impart fertility to the soil; and though the addition of chemical ingredients will change hard water so as to be available for culinary or laundry uses, yet we question very much whether soda, and its kindred substances, can be said to divert the mixture of its pernicious quality by adding its own influence to the compound. This mixture of opposing elements may serve the chemical purpose of washing, but to render water more fit for plants, a less mechanical action must be adopted, and "time," that never-failing agent, will accomplish the task better than the forcible means concocted in the laboratory of the man of science. We advise the young gardener, who has only a deep pump to run to for every drop of water he wants for his plants, to prepare a basin or pond large enough for, at least, a week's supply; this, by being kept filled, and allowed to stand exposed to the air and sun, will speedily become divested of some of those properties so much at variance with good culture; and though it is not likely to be so good as rain-water, yet it is better after such an exposure than it was before, and, consequently, may be used with more freedom.

In the application of *water to beds of seedlings*, take especial care not to do it until you feel satisfied the plants can no longer do without it, unless at a sacrifice to themselves; to begin watering immediately the sun dries the upper surface of the ground, is bad in the extreme, and sure to lead to bad consequences. After a period of moist weather, it is some time ere watering

need be practised, for though the plants may be young, and not deep-rooted, yet if the soil be loose below them (as we expect it to be), the sun's action will bring up sufficient moisture from below to meet all the wants of the roots, and though the top portion will keep drying up deeper and deeper every day, yet the descending root will, in all vegetation, keep pace with it, and in its search for moisture, will penetrate deeper and deeper, until it feels less effects from sunshine, and, consequently, cease to show its influence. In opposition to this grand natural principle, is the dribbling system of supplying moisture by artificial means, or the equally reprehensible way of over-doing it, by regular and systematic drenchings. The latter mode, by cooling the ground, retards the vegetation in a manner something like a human being having their lower extremities immersed in cold water all day, while the dribble system, by falsely tempting the roots of the plant to remain near the top, exposes them to those sudden changes of drought and moisture so fatal to their welfare, and, probably, the neglect of giving them their food at the stated time, may be at the expense of their lives, supposing the dry weather to continue, and the dribbling system to have diverted their principal roots to near the top, so as to take the advantage of the little moisture supplied, besides which, frequently watering the ground hardens and sours it, and unless means be taken to break it up, the sun soon bakes it into that unpleasant mass, so distasteful to vegetation as well as unsightly to look upon.

When, therefore, beds of seedlings must have water, let them have it, if possible, on a dull day; and if the following one be a bright sunny one, shade them a little, by preading some boughs over the beds, or by some other contrivance, whereby the fiercer rays of sunshine will be arrested without the plants being much deprived of light; while some plants of a more robust character will be benefited by having a good watering; and, a few hours after, the ground may be stirred around them, in order to break that sealed-up surface which artificial watering so invariably assumes; added to this, some slight mulching, wet dung, or leafy matter, will arrest that evaporation which robs the ground of what has been so lately added.

J. ROBSON.

THE AFTER-CULTURE AND MANAGEMENT OF ROOT-CROPS.

In the after-management of the young plants of Turnips, Mangold, or Carrots, when drilled on the flat and level surface, the first operation required is to harrow across the drills, once or twice, according to the state of the land. If the land has been beaten down hard by heavy rains, it will be necessary to use the harrows, or drags, until the surface soil is made loose; it is, however, best to allow one day between the harrowings, when a succession of them is required, taking care always to choose dry weather, and when the land is white and dry upon the surface.

The harrowing should always be commenced as soon as the young plants are able to withstand the operation, because it not only loosens the soil, and accelerates growth, but it destroys a great many small weeds, and disturbs the insect enemies of the plant—such as the fly, wireworm, and grub. It should also be understood, when the plant is irregular and defective, that a serious loss of plant may be the consequence of using the harrows too frequently.

In case the roots are grown upon the stetch, and a regular plant is obtained, a single harrowing across the stetch may be of advantage; but, generally speaking, it is not required, as the land does not usually run together so hard in ridge culture as it does on the flat. Horse-hoeing will be required next, and this is, certainly, the most important operation in the inter-culture of root-crops, it being the cheapest, the most expeditious, and the most beneficial to the plants. Two modes of horse-hoeing are adopted: one, that of hoeing between a number of rows at once, taking the same number of rows as the drill; and it answers well for Turnips, where they come quickly, and when the land is light and loose. But in early-sown crops, as Mangold, Carrots, and Swedes, the land generally being more consolidated, the best and most effective implement is the single horse-hoe, which cuts up the weeds, and moves the soil to any depth required; as it, however, only hoes one row at a time, although it is the most expensive, yet one horse will hoe about four acres in a day, and the number of hoes may be increased according to the size of the farm.

My own mode of using the single horse-hoe, previous to hand-hoeing, is as follows:—A day or two after the harrows have been used, to commence on one side of the field, and cut up the weeds as close as possible to the row on the right hand side of the plants, without destroying them, and go over the whole field in this manner; then, after the lapse of a day or two, sufficient to give time for the plants which might have been partially buried to become erect, to commence hoeing on the other side of the field, cutting the weeds, as before, on the left hand side of the row. By this plan, all the ground is moved, except a space of two or three inches whereon the rows of plants are growing. The advantages of this mode are twofold—there is very little work left for the hand-hoes and singlers, and, the earth being moved close to the plants, it increases their growth amazingly. In case of wet weather setting in suddenly after this operation, the hand-hoeing may be deferred much longer without injury to the crop, there being no weeds left between the rows. The next work to be done is hand-hoeing, and singling; and, as this is a somewhat expensive operation, it becomes important how it may be best effected at the least cost.

The hand-hoeing and singling is often done by a gang of men, who, at one operation, cut out the weeds from the rows, and single the plants to the distance they are required to remain; but it can be done better and cheaper by men cutting out the plants, leaving them in small bunches, at the distance required, with women or boys to follow, singling out and leaving the strongest plant in the bunch. The work can be done in this way with great exactness, and at a cheaper rate, than when men only are employed; the women often being very expert at this work.

Mr. Pusey has published a plan, whereby it is stated, he saves considerable expense in hoeing Turnips, by using the horse-hoe lengthways and crossways, which, of course, leaves the plants in bunches, at regular dis-

tances in the row, ready for the singlers to follow and complete the work. This plan, in some cases, has advantages over any other, it being both expeditious and effective; but it must be borne in mind, that it cannot be carried out unless the plant of Turnips are regular and thick in the rows. I think it is the exception, to find a sufficient plant to make Mr. Pusey's mode available, and that it cannot be adopted as a rule, without causing, oftentimes, a serious destruction and loss of plant.

I have, in some cases, when circumstances have prevented the use of the drill, sown Turnips rather thick broadcast, and horse-hoed them out into lines, and found it answer a good purpose.

Before the second hand-hoeing is done, it is best to use the horse-hoe between the rows of either Turnips, Mangold, or Carrots, especially if heavy rains have occurred, otherwise the plants will not derive the full benefit from the second hand-hoeing. In this case, the single horse-hoe will prove superior to that made the width of the drill, and hoeing a number of rows at once, because, at this stage of the growth of the crop, the earth often becomes settled and hard round the plants, requiring the deep action of the single horse-hoe, for which purpose it is the most effective implement.

The second hand-hoeing should not be deferred too long; generally, about a fortnight after the plants are singled will be the best time, the object of the second hand-hoeing being to destroy the remaining weeds, and cut up any plants which may have been left double.

The crops may now be left to make their growth, and, as they proceed towards maturity, weeds will continue to spring up, which should be hand-pulled, and removed, together with bastard plants, or those running to seed.

Having gone into the detail of hoeing, &c., I would observe, that space must be given between the rows sufficient to carry out the inter-culture, and at the same time secure the greatest crop. I think the best distance, in ordinary culture, for Swedish Turnips, is twenty inches between the rows, and fifteen inches between the plants in the row. For Mangold Wurzel, two feet apart between the rows, and eighteen inches distance in the row. For Carrots, the best distance is eighteen inches between the rows, and seven or eight inches apart in the row.

The foregoing observations apply to ordinary culture and soils in general, any variation from which must be left to the judgment of the cultivator, who should be guided by the nature and condition of the soil, and the climate in which it is situated. JOSEPH BLUNDELL.

WILLIAM ADAMS.

By the Authoress of "My Flowers."

OH, the sufferings of the poor! the sorrows that flesh is heir to! the sad, the melancholy evidences of the fall of man! Wherever we turn our eyes we see the consequences of our first parents' disobedience; the fruits of the first crime. Was not the earth cursed for their sakes? We cannot tell what the beauty of nature was before the fall; to our eyes it is now exquisitely lovely, and we can hardly

desire it to be brighter and fairer than it is. We do not see or understand fully *the curse*, until we leave the sunshine, and flowers, and waving glory of the grass and trees, and enter the houses that are raised upon the face of the ground to be the dwelling-places of men. *Then* we see it in all its fearfulness, often sweetened and brightened by the Hand of Infinite love; but still terrible and appalling. What would become of us, if there had not been found "a ransom!"

I have never seen a more distressing case of bodily suffering than that of William Adams. He has an internal cancer in the back, which is quietly and slowly consuming him, literally killing him by inches. He was a sufferer for a great length of time before he gave up his work. The poor cannot afford to lay by so long as they can possibly stand upright and drag themselves along. Adams worked when he could not stand upright, and only gave in when the torture overpowered him. The case was not clearly ascertained in the country, and he was sent to the County Hospital. In three days he was discharged as incurable; the cancer could not be operated upon; he must wait for death without relief or hope. It is not possible to describe the ceaseless agony in which he lingers. He can neither sit, stand, nor lie down so as to rest his poor racked body. In fact, he cannot sit, or stand, except bent double; and when he is weary of tossing on his bed, he can only stand leaning one hand upon a table, and the other passed through the noose of a rope that hangs from a beam. His bed is fixed in the corner of the little clean kitchen, just under the window, where a flower pot or two are placed; and he can see all that passes by, and beyond the road, a green hedge, and the open air; but his sufferings are too great to allow of interest in anything but "the covenant," to which he clings with all his spiritual powers. "I have known the Lord forty years," he said, one day; "What should I do, if I had to seek him *now*?" It is affecting and amazing to see his perfect composure under the deadly pangs that distract him. His face wears a kind of customary smile, and the forehead never contracts, nor do the lips utter one single murmur. "Sometimes I feel that I shall despair," he says, "such is my terrible agony, but the Lord keeps me from it. People come and tell me I must not give way; but they don't know my sufferings; they talk like those who have never suffered; bless you, ma'am, they can't understand it." Poor Adams! none, indeed, can understand it, but He who was the "man of sorrows;" who in all our afflictions is Himself afflicted; "by whose stripes we are healed." The Infinite Wisdom that heats the furnace for us; the love that sits by, like a refiner tempering the fire, can alone know and feel the weight and deadliness of the needed process. Men cannot know what others feel; they may talk wisely and well, but their talking is all moonshine; it is only the Hand that made us that can understand our frames, and enter into the secrets of our trials. "I, even I, am He that comforteth you," is the experience of men, as well as the assurance of the Lord. Those that *do not* know Him, have no comfort; those that *do*, need no other.

Poor Adams is likely to continue some time yet among the living. His general health and spirits are good; the fangs of the cancer have not yet seized upon a vital part, and until they do, or until it wholly stops the functions of life, he will linger on. He sometimes trembles to think how long he is likely to suffer; but his fears and shudderings are, indeed, only those of the flesh, "his heart is fixed, trusting in the Lord."

His wife is obliged to go out to day's-work when she can get employment. The poor cannot afford to wait upon each other as they wish; the daily bread is required, and where there is sickness there is more expence. Many days, one after the other, Adams suffers in solitude. His food is placed on a little table near him, covered over with a cloth, so that when the meal-time comes, he can contrive to shuffle to it and help himself. Sometimes a neighbour opens the door, and speaks a few words to him; but he is otherwise quite alone, till his wife returns from work. There is this to be said for a true believer, that he is never *alone*. He knows "the fellowship of Christ's sufferings," but he is also partaker in Christ's consolations. He can say, "and yet I am not alone, because the Father is with me!" We may be quite sure of this, that if we knew Christ as we *ought* to know Him; if we were living up to His commands, and our privileges, as we

ought to do; if we realised the Christian's portion and possessions in Him, as we *ought* to realise it, not only would the sting of death be drawn out, but the sting of pain, the sting of sorrow, the sting of solitude, the sting of everything that is most distressing and trying to us, would be drawn out too. And in proportion to our growth in grace, will be our growth in peace and inward happiness, wherever and whatever our lot may be. When we do not like to be left by ourselves, there is something wrong, depend upon it. When we cannot say, with fervent joy, "I am never *alone*," let us look into our accounts without loss of time, for we are on the eve of bankruptcy.

There are many cottages in our land that would speak a word in season to those who dwell in lordly halls; but that of poor Adams would speak as loudly as any of them. Some of the rich, and kind-hearted, too, are content to send their gifts by other hands; to provide abundance of clothes and other necessities for the poor, but to place them under the charge of other ladies to distribute. This is, indeed, *giving to the poor*; but it is robbing themselves. It is robbing themselves of the useful, blessed, and often beautiful lessons to be learned beneath the poor man's roof; it is robbing themselves of the blessedness of fulfilling their Master's orders, and of the exquisite pleasure of ministering, even in the smallest and humblest way, to the comfort and help of our poor brethren; and it is robbing ourselves of opportunities of spiritual as well as bodily usefulness, for which we shall be called to a sharp account at the last day. Pride, or bashfulness, or false humility, or thoughtlessness, or ignorance, is at the root of the matter, when we stand aloof from the poor man's cottage; want of feeling, I believe and hope, is not often the reason. I wish *all* could open the door of Adams' cottage, and peep over the screen that keeps away the draught. I am sure pride would stumble and fall, bashfulness and false humility would grow bold, and thoughtlessness and ignorance would let their tears run down, at the sight their eyes would see. And let us bear in mind poor Adams' own word, "When a friend comes in and speaks *good words* it seems to stun the pain."

The rich have "ten talents" to trade with, certainly; but let none be discouraged and drawback; "*good words* *stun the pain*."

THE CHELTENHAM POULTRY-SHOW.

THE second Cheltenham and County of Gloucester summer Exhibition of Poultry was held, as will have been seen in our last number, at the Royal Old Wells, at Cheltenham, on the 1st and 2nd instant. Few localities have greater advantages for such a meeting, and the energies of the Messrs. Jessop were successfully directed to overcome the many obstacles that have hitherto proved so detrimental to such exhibitions at the present season of the year, when brilliancy of plumage is on the wane with fowls of all varieties, and so many are necessarily kept at home by their maternal duties. The larger birds were arranged in a tent; while Bantams, Pigeons, and the extra class, occupied the adjoining Pump-room.

Heading the catalogue, *Shanghaes* made a goodly muster; and although we might not be able to assign unqualified praise to the occupants of any one pen collectively, individual specimens of the highest merit were numerous. Thus, in Mr. Fairlie's prize pen, the cock did not strike us as quite worthy of the hens placed with him, which latter, in form no less than colour, fully merited the distinction that had been awarded them. The largest bird in the exhibition was probably Mr. Cattelle's *Shanghae* cock in pen 11; his weight, we are assured, has reached 14½ lbs., though he would, of course, fall short of that at the present season. But had it been in our power to select any one bird, as combining excellence in form and colour, our choice would undoubtedly have fallen on Mr. Potts' *Shanghae* cock in pen 24. He was a magnificent specimen, and left little to be desired, either as to symmetry or plumage. Commendations were numerous in this class, and the birds were shown in far better condition than could have been anticipated for the month of June.

Among the *Partridge-plumaged Shanghaes*, competition must have been very close, and, at first sight, our opinion

would have inclined to the selection of Mr. Punchard's pen 37, for the honour of the first prize, both on account of their extreme brilliancy of feather, as also for their shape and carriage. Closer inspection, however, explained the correctness of the judgment passed upon them, since one of the hens was slightly muffed on the throat, and thus precedence was rightly accorded to the birds belonging to Mr. Mapplebeck.

The *White Shanghaes* were a fair class, but would hardly call for any special comment, and as regards the *Black*, we must express our conviction, that the presence of any other colour on any portion of the plumage should be a fatal objection. On the present occasion there was not a pen shown where the cock was free from this blemish. The task of adjudication could have been no sinecure when some fifty pens of *Shanghae chickens* were submitted to the umpires. The difficulty of pronouncing on the merits of all young animals is proverbial, and in the present instance, several of the pens contained such juvenile inmates, that anticipation of what they would be must have formed a necessary item in arriving at any conclusion for their relative positions in the prize list. The *Light Buff* birds were in a decided majority; and we should much question whether twelve months since so good an assemblage could have been brought together.

In *Coloured Dorkings*, birds belonging to Captain Hornby took both first and second prizes, and most justly did they merit that distinction, for, although there might have been heavier birds in this class, none equalled them in respect of form or feather. We must express our regret at the comparative absence of the *White Dorkings*, of which only two pens were present.

Spanish, as might have been anticipated, added another victory to the triumphs of Captain Hornby, whose uninterrupted successes in this family, during the past year, testify no less to the skill by which the original selection of his stock was guided, than the judgment and good management that has continued the *Knowsley* birds in their present enviable position. It is no disparagement, indeed, to other exhibitors in this class, to speak thus highly of the winners, and Mrs. Stow and Mr. Simons may well congratulate themselves on their possession of birds that possess so many good points as those that were shown by them on this occasion.

In *Game Fowls*, likewise, the first prize fell to Captain Hornby, and better specimens of the old Derby Reds it would be difficult to find. The *Red Duns* seemed to us deficient in brilliancy of hackle, and some hens, shown with a black-breasted red cock, conveyed an idea, that the blood of a gray Duckwing had something to do with their origin.

If anything could replace *Malays* in the position they once held in the public estimation, the very beautiful cock in pen 170 would do them good service.

Mr. Sayer's *Chittagong* hens should have had a male companion of higher pretensions, since a better place was probably lost to them from the inferiority of their consort.

Polands were a large class, in comparison with the total number of pens. The *White Crested* birds, belonging to Mr. Adkins, which carried off the first prize, were decidedly good, but the cock had suffered terribly in his topknot, in which some wide gaps were visible. The *Silver* were a far better class than the *Golden* birds; the former, indeed, were well represented, Mr. Rawson's pen, No. 190, having points of very great merit.

The first prize in *Gold Spangled Hamburgs* was won by Mr. Adkins. The cock, in particular, attracted our notice, his saddle-feathers being well rounded, and spangled at the extremities, and not taking the form of the hackle as is too often seen. With respect to the *Golden Pencilled* birds, we shall still ask for a clearer hackle; the pencilling, however, was very good.

Silver Spangled Hamburgs were greatly in advance of the *Silver Pencilled*; the latter, indeed, were very indifferent, the hens in the prize pens being but a few degrees removed from the markings of their Spangled cousins.

Bantams included many good birds, but the *Silver*, probably, would have stood foremost of the different varieties.

Cross-Bred Fowls were numerous, but none struck us as likely to become an improvement on our present races of unstained pedigree.

In the "*Thorough-bred*" class, Mr. Fairlie's "*Scotch Bakes*, or *Dumpies*," conveyed the idea of a Dorking on stumps; Mr. Pott's *White Polands* were excellent; and some *Silk fowls*, belonging to Mrs. W. H. Hyett, were the best of their kind we ever saw, and shown, moreover, in the best condition.

A first prize was taken by the Rev. J. Herbert for *Dorking chickens*, large, robust birds.

Turkies would not call for any special notice, beyond the poults exhibited by Mr. Fairlie, which were the most forward for the season that we ever remember to have seen.

In *Pigeons*, Mr. Adkins, as usual, headed the list. His *Carriers*, *Runts*, *Pouters*, and *Jacobins*, were excellent. His "*Australian Bronze-wings*" should, however, have had a better light for the display of the resplendent colours of their plumage. Mrs. Bailey, of Mount-street, had a very beautiful pair of *Scanderoon Pigeons*, the elongation of their neck and wing indicating great power of flight. Mr. J. Bailey, Jun., exhibited a remarkably good pair of *Archangel Pigeons*.

Geese, the *Toulouse* alone excepted, were an ordinary lot; and the *Rouen Ducks* were the best of their family, the *Aylesbury* being deficient in condition, no less than size.

Such were the observations that occurred to us as each class was passed in review. The birds, we should observe, were shown in round baskets, a plan no doubt possessing advantages, as enabling the Judges to place competing pens side by side; but, even if this should be thought essential, it would be no hard task to contrive pens for this purpose; and the wicker-work sadly interferes with a good view, and on this occasion cramped the fowls in too narrow a space.

The repeated exclamations of "*Get up, old fellow!*" and "*let's have a look at you,*" accompanied by the insertion of walking-sticks and parasols, suggested the necessity of some arrangement by which the hazard thus incurred may henceforth be avoided. Deliberate injury is not intended; but mere spectators are seldom aware how slight a blow may result in serious consequences.

The Messrs. Jessop, on whom the whole responsibility seems to have rested, did wisely in securing the services of Mr. Bond, Mr. Bissell, and Mr. Cottle, to the justice of whose decisions we give our ready assent.

THE VEGETABLE MARROW;

ITS VALUE AS AN ARTICLE OF FOOD TO THE COTTAGER.

A GENTLEMAN, who has taken great interest in my pursuits, very kindly presented me, last year, with a few Vegetable Marrow seeds, and recommended me to grow them as being a very delicious and wholesome vegetable, and as an excellent substitute for the potato. I accordingly put the seed into a flower-pot, with some rich mould, and raised the plants in a manure-heap, in the same way as cucumbers; as soon as the plants were sufficiently strong, I transplanted them, in the open ground, in the following manner:—I dug a trench, two feet wide, and eighteen inches deep, and filled it up with manure, and spread some rich mould on the top, about two or three inches deep, to fix the plants in, and set them at three feet apart. I supplied them liberally with water, and, for two or three days, shaded them from the sun till they had sufficiently recovered from their removal. The number of plants that I set out were only eight, and the quantity of fruit they produced was surprising. Some of them were very large, weighing as much as fourteen pounds.

Besides giving several away to our friends and neighbours, we had an abundance for our own consumption, both in the ripe and unripe state. Whilst they were young, we found them excellent to eat, cooked in the following manner: When about half-grown, we cut them in quarters, and boiled them in plenty of water (adding a small quantity of salt) for twenty minutes; then took them up carefully, and seasoned them with pepper, and salt, and a little plain butter: in this way they are delicious. But the most advantageous way we found in using them was in their ripe state, for pies, and with the addition of a few apples or bullaces, they make substantial food for large families; or, if cut up in small pieces, about one inch square, and stewed well, with a little treacle added, they are excellent. They are also very nice

when well-boiled, and the peel taken off; then mashed with butter, pepper, and salt, in the same way as potatoes or turnips.

Respecting their quality, we find them far superior to the pumpkin, as they contain a greater portion of floury matter, and they will keep a much longer time. The way we preserved them through the winter, was by keeping them in a dry, cool chamber, laying them separately on the floor, and protecting them from the frost; we had several of them quite sound till the month of April.

Having found them such a valuable vegetable, I am, this year, growing them on a larger scale, planting them in every odd corner, and on my manure-heaps. Besides being excellent as human food, they are also very good for fattening pigs, when boiled and mixed with a portion of pollard or barley-meal.

The proper time for sowing the seed is about the last week in May, or the first week in June. They can either be raised in a hot-bed, or sown where they are to stand, by putting them into some rich mould, and watering them plentifully. I am sowing them in this way this season.

From the success that I have met with, I have induced several cottagers to try the cultivation of this valuable vegetable, and have given them some seed to begin with.

JOHN SILETT.

OBSTRUCTIONS OF THE EGG-PASSAGE.

THAT affections of the egg-passage in poultry are very important, is manifest from recent contributions to your pages; the following cases, also, are somewhat illustrative of the subject:—

A large *Cochin* hen dropped from her perch, and died; the vessels of the head were found highly congested, but the result was somewhat inexplicable, as she had been by no means highly fed. A day or two subsequently, I was shewn an egg of very large size, which she had laid a day or two previous to her death. I then concluded that determination of blood to the head had probably resulted from obstruction, or irritation of the egg-passage.

A few days ago, a *Duck* was missing from her walk for two or three days; a boy found her on some water at a distance from home; he thought she looked queer, and he accordingly carried her home by the wings. On being placed on the ground, she turned her head once or twice from side to side, and died. At first, it was supposed that she had been hit upon the head by boys throwing stones at her, but this supposition was not confirmed by any mark of a blow. On a *post-mortem* examination, a very large egg was found imparted transversely at the extremity of the egg-passage; anterior to this was another full-formed egg, and again anterior to this was a third full-sized egg, but *broken*; the ovary was a large mass of 30 eggs, or more. Here, then, was a decided case of obstruction of the egg-passage, producing apoplexy and death.

CHIRURGUS, Oswestry.

SKELETONS OF LEAVES.

To form these, soak the leaves, when at their full growth, in a tub of rain-water. They must remain in the water, just so long as to rot the parenchyma (or soft, juicy parts), without sensibly affecting the nerves. This state can only be ascertained by frequent examination, and subjecting them to the next process, when it will be easily seen if they need further soaking. To clear away the parenchyma, lay the leaves on a smooth board, and pump upon them: any slight adhesions of parenchyma may be picked out with a needle, but the stream of water is the only mode of doing the work safely and expeditiously. Bleach the skeletons in a moderately strong solution of chloride of lime; then dry and press them.

If a large number of leaves are to be done at once, it might be as well to remove them from their tub, and allow them to remain for a few hours in a vessel of pure water, before bringing them to the pump, as the smell is apt to be offensive.

SIGMA.

ASPARAGUS CULTURE.

I AM glad to see attention drawn to the culture of Asparagus. I have just had pricked out 250 seedlings, wherewith to try experiments. My object is to prolong the season by forcing and retarding. The result, if I live, you shall know. An old Clergyman whom I knew, grew asparagus in the same bed for thirty years; liberal treatment in giving and taking was the only secret, and the bed never seemed likely to decay under his management.

I am sure that the high-mounded beds are meant only for heavy and wet soils. I have thrown up no mould on mine for two years, and this season I have had no stalks cut thinner than my little finger (a lady once told me, my fingers were all thumbs), nor any with less than four inches of green. My soil is a hungry sand. In November, I lay on about four inches thick of the richest stuff from the bottom of my dung-pit; rake off the straw about the end of March, and very lightly fork over the beds.

SIGMA.

SHANGHAE POULTRY SALES—BEES.

I THINK a caution would save some of your subscribers a great deal of anxiety, trouble, and expense, about their Shanghai fowls which they intend to sell. I have attended Mr. Stevens's twice, the 3rd and 31st of May, and on both occasions find that dark-coloured birds do not sell at anything like the prices of light-coloured fowls, and, in numerous cases, they did not sell at all. The average prices of dark birds are from 6s. to 12s., and very rarely higher. Buff, with *clean* or unfeathered legs, sell for about the same prices. It is only the *very* light-coloured birds, well-feathered on the legs, and of extra size and shape, that bring from £1 to £30 or £40, according to merit.

There is also another point not to be forgotten, that even a dark hackle round the neck detracts considerably from the value of the light-coloured birds. If what I have written be correct, it leads to the supposition that Shanghai fowls are in future to be considered more as a fancy fowl than for any particular good quality they possess; because we should expect a dark bird to lay as many and as large eggs as the light birds, and for table use dark poultry generally has the best coloured flesh. For instance, the Spanish fowl, and black Turkeys, are always considered to produce the whitest and best-looking flesh on the table. What, then, but mere fancy, can lead us to pay so much more for light Shanghaes, in preference to dark ones, seeing that neither a dark-coloured plumage, nor feathers on the legs, nor a dark hackle on the neck, can make any difference in the taste of the flesh, or the number or quality of eggs laid.

In conclusion, let me warn your readers, that though they may have first-rate birds, they must not expect to obtain within thirty or forty per cent. of the prices realised by such breeders as Messrs. Sturgeon, Fletcher, and others, who have a fame for these birds. Now, I am not wishing to run down the Shanghaes, but my object is rather to show your readers that none but *really first-rate*, light-coloured birds, and well-feathered on the legs, will sell at anything like prices they may have been led to expect, and that ere long we must expect a considerable decline in prices, *except for very choice specimens*.

Mr. Payne will, I have no doubt, wish to hear when *the first swarms of bees* come out this year. A neighbour had a swarm on the 26th of May, and I was told of one on the 25th of May. I have not seen a drone yet in my own stock.

Any one visiting Guilford, and having half-an-hour to spare, should call upon Mr. Whitburn, butcher, Spital-street, and ask for permission to see his garden, which I know he will have much pleasure in showing, and most visitors will be very much surprised to see. It is very small, but full of choice plants, and kept in such a manner as to be a lesson to any gardener. He has a *Wisteria sinensis* now (June 3) in full bloom. We counted fifteen bunches of bloom hanging down in one cluster, and there are dozens such. He has also a plant of *Tropaeolum Jarrattii* in full bloom, which has been in the open ground two months, and he has been trying several years to make this a hardier plant, but he has not yet succeeded to his wish. His manner of treating Fuchsias, Verbenas, Geraniums, and other tender plants, in

winter, would, I think, interest you much, and would be worth knowing to those having only a limited space for that purpose. August and September he considers his best show months.—J. NEWLANE.

SEA WEEDS.—No. 3.

HAVING spoken in the preceding chapter of the three classes of Sea Weeds as distinguished by their colour—the *Melanospermeae*, or Olive-coloured, the *Rhodosperrmeae*, or Red, and the *Chlorosperrmeae*, or Green—I shall, in this paper, speak of the order FUCACEAE. "Olive-coloured Sea Weeds, inarticulate, and whose spores are contained in spherical cavities immersed in the substance of the frond." The root is generally a disk; the fronds, olive-brown or olive-green, when living, but very dark, or almost black, when dry. "This order," says Dr. Harvey, "is much the most extensive among *Melanosperms*, comprising within its limits upwards of two hundred and thirty species.

"The British species are but fourteen, and yet they cover more surface of tidal rocks than all the other *Algae* put together. They are the most valuable of marine plants: the decayed fronds are used for manure; kelp is procured from their ashes; they are the chief source of iodine; and several afford a grateful winter pasturage to the herds of cattle along the inclement shores of northern Europe." The British genera are *Sargassum*, *Halidrys*, *Cystoseira*, *Pycnophycus*, *Fucus*, and *Himanthalia*.

SARGASSUM.

The *Sargassums* can scarcely be called British, being only now and then cast upon our shores. The species are chiefly natives of the tropics. The *Gulf Weed*, which was so striking to Columbus and his companions, making the ocean appear like a meadow, is *Sargassum bacciferum*, which, strange to say, has never been found growing, but floating about in the deep sea. In a packet of weeds which I received some time ago from Jaffa, were specimens of *Sargassum vulgare* (Common), and *Sargassum linifolium* (Flax-leaved). Many of these specimens, when floated,* were disposed of for the benefit of the descendants of those to whom the Holy Land once belonged, and who shall yet again possess it.

To return to a description of the *Fucaceae*. The first species is *Sargassum vulgare*.—*Ag.*—Stem flat, slender, alternately branched; leaves linear, lanceolate, serrated, dotted with mucous pores; air-vessels few, spherical, on flat stalks; receptacles cylindrical, branched. Occasionally cast on our shores.

Sargassum bacciferum (Berry-bearing).—Stem cylindrical, slender, much branched, flexuose; leaves linear, serrated, mostly without pores; air-vessels abundant, spherical, on cylindrical stalks; receptacles unknown. Occasionally driven ashore like the preceding, together with cocoa-nuts and other tropical productions.

HALIDRYS.

"Frond compressed, linear, pinnated, with distichous branches; air-vessels lanceolate, stalked, divided into several cells by transverse partitions; receptacles terminal, stalked, cellular, pierced by numerous pores, which communicate with immersed, spherical conceptacles. Name from two Greek words, signifying the sea and an oak or tree."

HALIDRYS SILIQUOSA (Podded).—Branches linear, very narrow; air-vessels compressed, linear, lanceolate; slightly constricted at the septa (partitions); mucronate (having a small projecting point); variety *β. minor*, smaller in every part, with fewer vesicles. On rocks and stones in the sea—common on the British shores. Perennial;—winter and spring. Air-vessels resembling pods, whence the specific name.

CYSTOSEIRA.—*Ag.*

Fronds much branched, occasionally leafy at base; branches becoming more slender upwards, and containing strings of simple air-vessels within their substance; receptacles terminal, small, cellular, pierced by numerous pores,

* A technical term for arranging. They have to be floated in water before they can be spread on paper.

which communicate with immersed spherical conceptacles, containing parietal spores and tufted antherida. Name from a bladder and a chain, because the air-vessels are generally arranged in strings or series.

The British species of this genus are—

CYSTOSEIRA ERICOIDES (Heath-like).—Common on rocks, between tide-marks. The fronds are from one to two feet long, and remarkably bushy; of a fine olive or yellowish-green when removed from the water, but appearing, while growing beneath the surface, to be clothed with the richest iridescent tints.

CYSTOSEIRA GRANULATA (Knob-bearing).—Rocky pools;



not uncommon; the stem is seven or eight inches high; the branches slender and very much divided, each having at its base a hard bulbous knob, which forms one of the most striking characters of the species.

CYSTOSEIRA BARBATA (Bearded).—A native of the Mediterranean coast; said to have been gathered on the Devonshire coast, by Hudson.

CYSTOSEIRA FENICULACEA (Fennel-like).—On rocks, in tide-pools.

CYSTOSEIRA FIBROSA (Fibrous).—On rocks near low-water mark, and in tide-pools. Frequent on the shores of England and Ireland—not found in Scotland. The air-vessels are larger than in any other British species; colour olive-green.

Of the remaining species of the *Fucaceæ*, I purpose giving descriptions in my next paper, taken, as these are, from Harvey's delightful and interesting work, entitled "*A Manual of the British Marine Algae*." His splendid work on Sea-weeds, "*Phycologia Britannica*," is too expensive for general students, but those who have access to public libraries may have a great treat in examining its beautiful illustrations, in addition to the valuable descriptions. Next month, this celebrated Algologist sets sail for Australia, where he purposes remaining until 1855, not returning home until that time. He is going in pursuit of many objects of Natural History, but his attention will be directed to the Marine *Algae*, which are so curious and varied in those seas. Sets of these *Algae*, varying in number from a hundred species and upwards, may be had by subscribers on his return.

S. B.

THE STRUCTURE, ACTION, AND DISEASES OF THE EGG ORGANS.

So little is popularly known respecting the egg-producing organs in the fowl, that I trust the following account of them will not be found either uninteresting or useless.

The general ignorance of their anatomy leads to the absurd statements which are to be found in almost all works treating on poultry, and the want of some rational knowledge of their diseases conduces to great mortality among laying hens.

The egg-producing organs in a fowl are, 1st, the *Ovarium*, or, as we may term it in English, the Ovary; and, 2ndly, the *Oviduct*, or, as it may be better called, the egg-passage. The ovary, which is almost always situated on the left side, is attached to the fore part of the left kidney. When the hen is not laying, it is small, and, comparatively, inconspicuous, and on examination will be found to contain an immense number of minute, roundish bladders, which are the rudiments of future eggs; when the hen is about to commence laying, some of these germs enlarge, not, however, all at the same time, but in regular succession, so that on examining a fertile ovary it will be found to contain germs of all sizes, from a pin's head to that of a full-grown yolk. The germs, as they enlarge, are connected with the ovary by exceedingly slender stalks, so that the whole organ assumes the appearance of a bunch of currants, the fruits of which are of various sizes. All that is found in the ovary is the yolk of the egg, on which may be observed a slightly opaque spot, to be developed, during the process of hatching, into the future bird.

As the yolks increase in size, that portion of the ovary which contains them, and which forms a skin or coating to each one, becomes covered with the branches of numerous blood vessels, and this appearance often leads to the erroneous opinion that the ovary is in a state of inflammation, or even mortification. Judging by my own experience, the ovary is not very liable to disease, for in the very large number of dead fowls that I have examined, I have never seen one in an unhealthy state.

The oviduct, or egg-passage, is a long tube, which varies very much in size at different periods. When the hen is not laying it is much smaller than during the time when the eggs are being formed; at this latter period it is, when stretched out to its full length, about two feet long.



The egg-passage commences by a wide, open, funnel-shaped aperture, as shown in the above drawing. At this end the passage is excessively thin and delicate; it gradually thickens, however, and forms a tube, which has very much the appearance of one of the bowels. If this tube (which, for the sake of clearness, has been shown in the engraving in a somewhat extended state) is cut open from end to end, it may be observed that the part nearest the

ovary is lined by longitudinal folds, but that at the other extremity it presents a velvety appearance. The outer end of the tube joins the termination of the bowels, just before the external aperture, both together forming a short, but large, passage termed the *Cloaca*, which is not shown in the engraving.

The action of these parts may now claim our attention. When a yolk has attained its full size in the ovary, the membrane covering it, and which has before been stated to be furnished with a network of blood-vessels, becomes exceedingly thin at one part, and the whole being grasped by the open funnel-shaped end of the egg-passage, the thin part gives way, and the yolk passes into the tubo. The office of the egg passage is to form in succession the various parts covering the yolk. The upper part of the tube that is lined with longitudinal folds secretes or forms the white of the egg, one portion of which is formed of a much more solid consistence than the remainder. This more solid portion is, as the yolk slides down the tube, twisted into two delicate spiral cords, the use of which is to keep the yolk in a proper position in the future egg; these cords, which are termed in scientific works the *chalaza*, are popularly called "the tread," and are erroneously supposed to be present only in an impregnated egg.

The yolk, being thus surrounded with the white, passes on towards the middle of the tube, and here it is retained, whilst a tough, parchment-like membrane, the skin lining the shell of the egg, is formed around it. This process having been completed, the whole egg passes into that part of the tube with the velvet-like lining, and there receives its last covering, which is formed chiefly of chalk, or carbonate of lime, and which constitutes the shell. This process performed, the egg is ready for expulsion. In the engraving, the egg-passage is represented as distended by an egg at the place where the shell is formed. Such is a brief outline of the structure of these important organs. Let us now apply the information to the understanding of some variations which unfortunately occur but too frequently among our laying hens.

If two yolks are equally developed in the ovary, and both received at the same time by the funnel-shaped end of the egg-passage, then both will be surrounded by the same white, shell, &c., and a double-yolked egg will result.

If, from being excited in any way, as by being driven about, or by over stimulating food, the egg-passage is roused to too rapid action, the egg may not be retained sufficiently long for the shell to be formed, and a soft, but otherwise perfect, egg results.

If the irritation extends to the middle of the tube, the membrane is malformed, and soft-eggs, shaped like hour-glasses, or perhaps not closed at the end, are produced. I have in my possession the skin of a soft egg, fourteen inches long, which was laid in my presence by a hen suffering from irritation of the passage.

If the irritation extends still farther, the yolks may be passed away without any covering whatever.

With regard to the statement respecting hens laying two perfect eggs in one day, I believe the only mode in which it can happen is by one being laid very early in the morning and the other late in the afternoon; that portion of the tube which forms the shell is only of sufficient length to contain one egg at once, two eggs, therefore, cannot be in the process of being shelled at the same time.

It not unfrequently happens that the outlet of the egg-passage becomes closed. This may happen from several causes: sometimes, by straining in laying, the *cloaca* passes out, and the derangement of the part closes the egg-passage; at other times, a soft, malformed egg may lose its contents, when the skin puckers up, and forms a thin, irregularly-shaped body, which the egg-passage cannot contract upon so as to expel. In these cases, I have noticed that the contents of the passage above the obstruction have, by a reverse action of the organ, been sent in the opposite direction; and I have found the white, or even an imperfect egg, loose in the cavity of the body, giving rise to a degree of inflammation which is necessarily fatal. This reverse action must also take place, to some extent, when one egg is found to be contained within another.

The expulsive efforts required in laying, are, in over-fed hens, the constant cause of apoplexy; all the sudden deaths

that occur in laying hens are to be attributed to this cause. I have examined scores of cases, and, in every instance, found rupture of the vessels of the brain.

As I have repeatedly observed, nine-tenths of the deaths in well-kept poultry arise from overfeeding, and from the use of food of too stimulating a character. Only last month my attention was called to a magnificent Spanish hen, which had died suddenly, as had four others in the same yard. The case was irritation of the egg-passage, which had produced imperfect eggs; the efforts to expel the latter had caused apoplexy. The cause was easy of removal—the fowls had been fed with a mixture containing hemp-seed, peas, &c., &c., and the over-exciting diet has produced its usual effects. The same day brought another corpse, that of a Pencilled Hamburgh. On examining her, I found a ruptured vessel in the brain: the crop containing some refuse meat and fat.

Grain, meal, pollard, cooked vegetables, as potatoes, parsnips, &c., and the insect food they obtain by scratching, form the wholesome food of poultry. Hempseed, peas, beans, tares, and such animal food, as liver, &c., and, above all, greaves—the refuse of the tallow-chandler, collected in a putrid state from the butcher and the marine-store shop—are, by far, too stimulating to constitute a wholesome diet. These truths have been insisted on in these pages, by myself and others repeatedly, but, to judge by the dead birds I am constantly receiving, with but little effect; so that I feel inclined to exclaim with Crabbe—

* * * * "refrain, refrain;
Or must I ever preach and preach in vain."

In connection with this subject, I may mention, that although I have never yet been fortunate enough to observe a diseased ovary, I believe that such exist. When a hen takes suddenly to crowing, and assumes the plumage of the cock, the ovary is usually diseased. I expect that this is sometimes the case in the birds termed "hen-cocks." By the kindness of one of our subscribers, I have one of these now in my possession, which was, last Christmas, bought of a well-known dealer, as a Dorking pullet; it now presents the appearance of a cock's-head, including a splendid comb and wattles, joined on to the body and plumage of a hen. I am anxious to keep it until next moulting-time, to observe any change that may occur in its plumage, and then to examine its internal structure, should I be so fortunate as to obtain the permission of its owner.

On looking over this article, I find that I have omitted to notice one very interesting circumstance. In the anatomy of these organs, I have stated that the ovary is on the left side only. In the young chick, however, the rudiments of two ovaries and two egg-passages are to be noticed, but, by one of those inscrutable arrangements which are constantly to be observed in the animal kingdom, the organs on one side, usually the right, cease to grow, and soon disappear. In some few birds of the Hawk tribe—the Goshawks and Harriers—both are developed; and, in that case only, are we correct, when we speak of the ovaries of a bird.

Should this paper be found more useful than tedious, I shall be happy to furnish, at some future period, a description of the digestive and other structures of the bird, including an account of the development of the chick in the egg.—W. B. TEGETMEIER, *Tottenham, Middlesex.*

ON THE MANAGEMENT OF SILKWORMS.

WITH COMMENTS AND ADDITIONS.

By the Prior Jacopo Ricci.

(Continued from page 189.)

SECTION II.

WHEN the eggs assume a whitish appearance they are about to hatch, and then some pieces of muslin, or paper, perforated with holes, must be placed on the boxes, and upon this muslin or paper the tender shoots of the mulberry. As soon as the worms are hatched they will ascend through the holes to the leaves, and may thus be removed, without being touched, to a little table, and thence to osier hurdles, covered with paper, taking care to place the twigs covered with worms at a distance of three or four inches from each other.

The few which hatch the first day had better be thrown away. If the stove-room be sufficiently large conveniently to hold the necessary hurdles, the worms may remain there till they are well grown. If not large enough, let them be removed to an adjacent apartment, arranged as nearly as possible like that of the stove. Such a room is necessary for those who would act methodically, for as the worms grow they occupy much space. If too thick and crowded, as is too often the case with us, they can neither breathe nor perspire, and the weaker get no food, consequently do not attain their proper size, work little, or die. It is essential, that wherever they are kept the temperature should be equal, and that there should be sufficient room for the necessary wicker frames or hurdles, so that every ounce of eggs should have a hundred and fifty square feet of room. As soon as they are properly placed, leaves, fresh, and quite dry, must be given them, torn into small pieces, and placed between the twigs on which the worms are, that they may by degrees spread themselves all over the leaves with which the hurdles are covered.

Some people cut the leaves with a knife or scissors, but they thus lose some of their sap, and the worms do not readily eat the edges which have been touched by steel; therefore, it is better to tear them into small pieces, especially in the first two stages of the worm's life. Thus they are more easily fed, food is saved, and the insect's life shortened, and the shorter its life the more easily it gets over its sickness or torpidity.

We have said, that if Silkworms are to succeed, they must have plenty of room to move at pleasure. From their hatching to their first change, six square feet should be allowed to the ounce; to the second, twelve; to the third, thirty; to the fourth, seventy; and in the fifth stage, that is from the fourth change till they go into the bush, they should have about one hundred and forty square feet. Whoever has more room should give it them, as it is of the greatest importance that in this stage the worms should be thinly scattered. They eat, grow, breathe, perspire, digest, and rest the better for it. They consume less food, are better tended, and the effluvia arising from the bed being carried off will not be so injurious.

In spreading the worms over the hurdles, or changing their beds, they must never be touched with the hand, for they will suffer from it whatever care be used. It makes one shudder to see them thrown by handfuls from dishes, or other vessels, upon the hurdles, and kept heaped together for many minutes. Such a proceeding proves that the care of the worms is entrusted to those who are ignorant of their constitution, so delicate in all its stages. Wishing, then, to move the worms from hurdle to hurdle, to scatter them, or to remove the remains of the food, and other impurities, let some shoots of the mulberry be laid upon the little worms, who will quickly cover them. When loaded, let these twigs be carried upon a table to other hurdles. Then those from which they have been removed must be thoroughly cleaned, and all extraneous matter quickly taken out of the apartment—they are then fit for the reception of other worms. The operation of scattering the worms and cleaning the hurdles must be performed once during the two first stages, twice during the third, and every day after the last, taking care that the worms occupy the prescribed space. Those worms which are just awaking should not be disturbed, but allowed one or two meals before they are touched. To facilitate the dispersion of the worms, the laden twigs should be placed in rows, at equal distances, and the leaves between them. At first it will appear that the worms are very thinly scattered, but as they grow it will not be so. It is certain that we keep our worms too crowded, and that, consequently, they do not thrive as they otherwise would.

In changing the bed in the last stage, some persons use a packthread net, on which they spread leaves, and lay upon the hurdle. The worms ascend, leaving the hurdle free to be cleaned from all fætid matter; this done, more leaves are scattered upon it, and the net put upon it, and the insects go down, attracted by the fresh food. One of the most difficult things to accomplish, and on which so much depends, is to have the worms of the same age. Care should be taken that they all eat equally, by an equal distribution of leaves. Those which are hatched some hours after the rest should be placed nearest the stove, and

in the highest frames; they should be fed oftener, and kept farther apart, that, having had as much food as the older worms, they may all become torpid at once. If such precautions be not used, the smaller worms, who had not strength to ascend the leaves, remain without nourishment, while the older ones sleep, and, perhaps, become sick, and infect the rest, to the great detriment of all. In feeding the worms, most people act by chance, though there are rules, the observance of which benefits the insect and saves the food. In the first four stages the worms may have a repast every five or six hours, that is, four or five times a-day, but in the fifth they eat voraciously, and must have six meals, the quantity being regulated by the appetite they evince. If after the meal they keep quiet, it is a sign they are satisfied. Until the fourth change, the leaves are given torn, because it is observed that the worms, allured by the smell of the bruised leaves, eat more greedily. By degrees they may be given in larger pieces, and in the last stage whole, but (that there may be no unnecessary matter in the bed) stripped of twigs and fruit. I think it well to repeat, that the leaves must not be given as soon as they are gathered, but must be dried for some hours.

With regard to the heat of the room. From the hatching to the first change, the thermometer should stand at 19° R. (75° F.); from the first to the second, at 18° R. (73° F.); from the second to the end of the third, at 17° R. (71° F.); and after the fourth, at 16° R. (68° F.). Should the rooms be cold, the stove must be kept burning; if too warm, the windows exposed to the sun must be closed, and the means before-mentioned must be resorted to. If the temperature be a degree or two higher, it will do no harm, only, in that case, the worms must have more food, because the warmth, increasing their powers of digestion, and making them perspire, provokes their appetite. It has been observed, that when good rules are observed, when the season is regular, and the food uniformly of a good quality, the interval between each change is abridged.

From the hatching to the first change, five or six days intervene, or less, if the food be given in very small pieces, as it is then more equally divided among the worms; from the first to the second sleep, four days pass. At this stage, those which remain in the beds, or are below the average size, should be removed. The interval between the second and third change occupies five days, and, to preserve them in health, fires must be lighted in the chimney, while the opposite ventilators are open to freshen the air, not forgetting to increase the space between the worms, according to the above-mentioned proportions. Eight days pass between the third and fourth stage. This is the most dangerous age for the worms, and they must be sedulously watched night and day. The bed must be frequently changed; fires must be kindled, of wood that emits no smoke, or of dry straw; every impurity must be scrupulously removed from the chamber, that the worms thus reared in-doors may have the same advantages as those in the open air. The only difference between them should be that which arises from a more even temperature; thus, if the atmosphere becomes oppressive, we must have recourse to the most approved methods of freshening it, and then the worms will continue healthy. The fifth stage is the longest, and on its result depends the harvest of cocoons.

As the worm increases in size many enemies appear; as, for instance, the almost incredible quantity of vapour that exudes, in the form of perspiration, from their bodies, and from the leaves if given too moist. These vapours relax the skin of the worm, which loses its appetite, does not digest its food, and suffers from various disorders which terminate fatally. The unwholesome exhalations from the bodies of the worms, and from the remains of their food, cause a difficulty in breathing, destroy their liveliness, and occasion death. The warmth of the external atmosphere, added to the heat and damp of the room, excite fermentation in the beds, and make the air unfit for respiration, and in a few hours, the fruit of all the previous care bestowed on the worms may be lost. It may not be useless to repeat, that, at this season, great care must be taken that the worms have plenty of space. They do not breathe by the mouth, but by orifices near their feet; and if they are too crowded, and these apertures are covered, any one may

understand that the insects must suffer from such neglect, which, however, is but too common.

If the prescribed means are employed for drying the leaves after unexpected or lasting rain; if the thermometer be used to test the temperature; if proper means are resorted to for freshening the air, when it becomes unwholesome, and other rules observed, we may confidently hope to escape fatal sickness in the establishment.*

The signs of approaching maturity in a worm are his abstinence from food, and his moving restlessly on the leaves, with his head elevated as in search of something. Looked at against the light, a small substance like the seed of a grape may be perceived in his body, and when many are seen climbing to the edge of the leaves, we may be sure instinct is teaching them to seek another abode. When the rings round the body shrink, and become golden-yellow, when the skin is wrinkled, and the body smaller and softer, as if made of dough, change is at hand. Though but a few of the worms show these indications, yet he who tends them must not delay his preparations, for should not the worm be allowed to climb into the bush as soon as he wishes it, the silk will be injured, and the strength of the worm impaired. Bundles of such twigs must be tied together, and cleansed from any thing that might injure the silk, and placed at distances of a foot apart, on the edge of the hurdles, and so arranged as to be most convenient to those who tend the worms. The bundles should be longer than the space between the hurdles, so that the two ends being fastened down they may form an arch turned inwards, that the worms may not fall to the ground as they attempt to climb.

(To be continued.)

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY Council was held at the Society's house, in Hanover Square, on Wednesday, the 11th of May.

NATURAL AND ARTIFICIAL GRASSES.—Professor Way, consulting chemist of the Society, submitted to the inspection of the members the tabular results he had obtained, during the last three years, from his chemical investigation into the relative nutritive value of the natural and artificial Grasses. These results were given in two tables, one of which contained the twenty analyses of natural Grasses, and the other thirteen analyses of artificial Grasses, and seven analyses of weeds; showing the proportion of water in the fresh plant, and the relation of each plant in its dried and undried state to albuminous and fatty matter. He gave a detailed statement of the valuable investigations undertaken in 1842, at the expense of the Duke of Bedford, and carried out by Mr. Sinclair, under suggestions by Sir H. Davy, for the purpose of ascertaining the composition and qualities of different Grasses, and the reason of their superior produce in particular cases. In these experiments the test of nutritive value was supposed to consist in the amount of soluble extractive matter obtained from equal weights of the several specimens of Grass. It is now, however, known that such extraction will give but a very imperfect indication of nutritive value, vegetable food being at the present day divided into the *nitrogenous* class, including albuminous and cheesy matter, the leguminous food of Peas, &c., and matter generally of an animal character; and the *non-nitrogenous* class, including starch, gum, sugar, and

fatty matter. In the first class, the nutritive substance is partly soluble and partly insoluble, the cheesy and leguminous matter being only soluble under certain circumstances; in the second class, the nutritive substances are generally soluble. It is under these great and contradistinguished divisions that the investigation he had undertaken under the direction of the chemical committee of the Society had been pursued. He offered the results obtained, simply as data on which inquiry might proceed, not as exponents of any assumed theory on the important question of the conversion of vegetable food into animal substance, on which so many distinguished physiologists and chemists held different opinions, and which, he thought, would receive its best solution by cautious induction from incontrovertible facts. He referred to the siliceous nature of the stems of natural Grasses, and to the opposite character of those of the artificial ones. He also cautioned the members against too hasty a conclusion of the value of produce from weight or bulk, which in many cases resulted from the large proportion of water the plant contained: he advised rather a consideration to be made of the per centage of dry solid matter obtained, as a surer guide to such relative value. He cited and illustrated cases of the deception that might arise from such estimation of the value of a crop; and entered into a detailed statement of the mode in which the Grasses had been collected by Mr. Bravender, and sent to him daily in closed tin cases; leaving the full elucidation of these details and his views generally on the subject, to be given in a paper he was preparing for the Journal of the Society, to be published next month.—Colonel Challoner referred to the probable advantage of Professor Way's double silicates for Grass-lands, deficient in the siliceous matter required for the natural Grasses.—Mr. Lawes favoured the members with a statement of those deductions, connected with the feeding of animals on nitrogenous and non-nitrogenous food, which he had drawn, not from theoretical assumptions, but from actual experiments on animals themselves. He pointed out the discrepancies arising in the present state of our knowledge, from the application of any assumed general rule on this subject, to cases of feeding. The result did not justify him in regarding nitrogen as an indispensable agent in these cases: if he made any assumption it would be in favour of the non-nitrogenous compounds constituting the food of animals, the nitrogenous being thrown away or wasted, while the non-nitrogenous were retained; but, without assuming the peculiar function of nitrogen in the animal economy, the truth in this, as in other cases, might lie midway between the extremes, and some relation hereafter be assigned between the two classes of nitrogenous and carbonaceous food best adapted for the purpose under each given circumstance. He entered into very interesting details connected with the striking results obtained by him in the course of his experiments on the feeding of animals. These will be given to the members in the pages of the new number of the Society's Journal, now in the press.—Mr. Daubeny remarked, that the results of Mr. Lawes's observations upon the superiority of non-nitrogenised over nitrogenised substances in feeding animals might be accounted for on this simple principle, namely, that the growth of an animal, beyond a certain point, depended rather upon the increase of fat than upon the increase of muscle. The production of the former would be favoured most by administering starch, sugar, and gum, and that of the latter by the albumen contained in the plant; consequently, it must, he thought, be bad economy to supply any animal with a larger amount of nitrogenised matter than was necessary for making up the waste of muscle. He would also venture to make another remark, in order to supply what appeared to him an omission in Professor Way's very able and useful communication; namely, that according to theory, the most profitable time for cutting the natural Grasses would be just when the largest accumulation of saccharine matter has already taken place. This would be just at the time when the flower begins to be developed, after which the secretions would undergo a continual diminution by being applied to the perfecting of the seed, for the use of which Nature had originally raised them up. He concluded by observing that these, likewise other theoretical suggestions, must of course be tested by practice; but he could not sit down without expressing his opinion that the

* When the master, or the women, perceive an unpleasant odour in the chamber, they think to remedy it by burning aromatic substances, and by pouring vinegar on red-hot iron. Such measures increase the mischief, consume the vital gas, and render the atmosphere quite unfit for respiration. When the above-mentioned remedies fail to purify the air, Signor Dandolo proposes to mix, in a strong glass bottle, six ounces of common salt, three ounces of black oxide of manganese, and three ounces of water, and well cork it. Another bottle should be ready, containing one pound of sulphuric acid, or oil of vitriol, a small glass of rosalia, and an iron spoon. Pour one spoonful from the small bottle into the large one, and a white vapour will arise, which must be diffused through the room, and then the bottle may be re-corked. Some writers propose concentrated oil of vitriol and powdered nitre, as less irritating to the lungs, and more quickly pervading the apartment. Some take half-an-ounce of concentrated sulphuric acid, in a glass vessel, and throw into it, from time to time, a pinch of powdered nitre. This method is employed in purifying the air after infectious diseases, shutting all the doors and windows, using several vessels if the rooms be large.

collection of such data as those which Professor Way had brought together in the tables then hung up in the room, would be of great service in suggesting experiments which might eventually lead to a more economical use of the Grasses employed in agriculture.—Mr. Slaney then favoured the Council with a very clear and striking statement of what he considered the points at issue in the controversies connected with the great question of feeding animals. In fact, he considered it to be always highly advantageous to the practical farmer when “doctors disagreed;” for, in such cases, there ensued that discussion of real fact, and that gradual elimination of non-essential considerations, which eventually led to a sounder knowledge of the subject. He referred to the different characters of the artificial and natural Grasses, in respect to amount of nitrogen contained in each, and to the statements of Professor Way and the experiments of Mr. Lawes, in reference to feeding properties in each case. He could not, however, help drawing a marked distinction between the quality of bulk and fatness of an animal, and that nervous development of much which conferred strength; and for each of these opposite effects, the different classes of food he thought might be administered with great advantage. He understood from Professor Way that the natural Grasses on which he experimented had not been grown separately in plots, but taken indiscriminately from the pastures on which they had grown; this, Mr. Slaney thought, did not give an equal area of natural Grass an equal chance of comparison with artificial Grass, to which, by the tables, it appeared so much inferior, because in the former case the natural pasture would furnish a considerable proportion of weeds.—Mr. Brandreth Gibbs pointed out, at the request of the members, the comparative permanence of the artificial Grasses on which Professor Way had made his analysis.—Mr. Rowlandson considered the annual value of pastures to preponderate over that of the other branches of husbandry. He complimented Professor Way on the sterling results he had obtained in this investigation of the grasses; only those who knew the labour of arriving by experiment at such results could fully estimate it. He, however, perceived two omissions in the list, which it would be well at some future time to supply, namely, that of Timothy Grass and the Yarrow: the value of the former was well known, and although it was not desirable to introduce too much of the latter in light pastures, it was, generally speaking, a useful adjunct. He had for fourteen years made the cultivation of Grasses an object of his study. He referred to the selection animals made of particular Grasses; cows, he remarked, would eat the soft meadow Grass, while horses would starve before they would touch it. It flowered, however, all the year round, and should enter in a small proportion into every pasture, yielding, as it did, as good a crop on poor land as any other grass. Science and practice, he added, would eventually be found to meet; their occasional divergence arose from overlooking small but essential conditions. He fully concurred with the observations of Dr. Daubeney and Mr. Slaney; he agreed with Mr. Lawes, to a certain extent only, that the feeding or money-making power of vegetable food was to be attributed to the non-nitrogenous rather than to the nitrogenous compounds. When in North Wales, a few years ago, he was told that it was a well-known fact that cows fed in pastures of clover and tares, the cheese was always indifferent; but that a dairy-woman in one part of the district made the best cheese from cows fed on nothing but tares and clover, some secret management being alleged as the cause of her success. Mr. Rowlandson had afterwards an opportunity of meeting with this dairy-woman, and he learned from her that the secret of her success consisted in housing the cows, and having the tares and clover cut and carried home to them; in this case the cheese was always good, while it was always bad when the cows were fed in the field. This circumstance, he thought, partly explained the views both of Prof. Way and Mr. Lawes. The exercise of the cows fed on leguminous plants consumed the butter, and eliminated a larger amount of cheesy matter through the secretion of the milk, leaving the cheese poor in butter; while in the case of cows at rest in the house, the butter was not consumed but eliminated with the milk, and passed into the cheese, which was accordingly of richer quality. In the feeding of pigs, too, Mr. Rowlandson did not consider either

leguminous or starchy food alone so profitable, when both were mixed and given together. The quick breathing power of young lambs required nitrogenous matter to form part of their sustenance.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed “To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London.”

CHRYSANTHEMUMS (*A Cottager*).—We shall be glad of the account you mention whenever it suits your convenience to send it. The following are twelve of the best large Chrysanthemums:—*Amazon* (Salter), deep rose-carmine; very full. *Annie* (Salter), light yellow; fine form. *Christophe Columbe* (Pele), bronze; very good. *Cloth of Gold*, orange-yellow; large, and a fine show flower. *Fleur de Marie*, pure white; aster-formed. *Leon Lacquay* (Lebois), lilac-purple; a fine flower. *Lady Talford*, pure white; a fine, large, show flower. *Madame Poggi*, splendid blood-erimson. *Nell Gwynne* (Salter), rose-peach; very full; a show flower. *Queen of England*, splendid blush-white; large and full. *Osiris* (Pele), centre nankeen, tipped with vermilion. *Rebecca*, clear rose; fine show flower.

PANSIES (*J. S. B.*).—Your inquiry would have been answered sooner, but we waited till most of kinds of Pansies now grown were in bloom. Great numbers have been examined, but none are like yours. We presume, then, yours are either very old varieties, not now grown, or they are seedlings. In either case, you need not grieve, for, as far we could judge, they are deficient in most of the properties of good Pansies.

PROPAGATING TREE PÆONIES (*Sarah*).—The Tree Pæonies are increased by layers, and also by grafting upon the tubers of commoner kinds. If they put out suckers near the soil, and then form roots of their own, which they sometimes do, they may be cut off from the parent plant, preserving all the roots, and may either be planted out at once, or be potted and kept through the first winter in a cold frame. The best time to take these suckers off is in September.

ORCHIDS (*W. S. W.*).—The dark *Cymbidium* appears to be *C. pendulum*, and the light-yellowish one probably is, as you supposed, *C. lancifolium*; but it is impossible, without seeing the plants, to be certain.

YOUNG VINES IN A GREENHOUSE VINERY (*East Anglian*).—Your Vines are strong, planted last season, and shewing from a dozen to fourteen bunches of grapes. Your question is a wise and pertinent one. We advise you to sacrifice present enjoyment to future success. From the description of your Vines, we would advise you to leave three or four of your best bunches—one more if the Vine is very strong; you will be amply repaid for the present loss in the future continuous well-doing of your Vines. We once took a dozen bunches from a similar strong young Vine, but it did no good for years afterwards.

PLUM-TREE CUT-IN TO FORM YOUNG WOOD (*A Reader*).—When a sufficiency of shoots are laid in, you ask, What to do with the laterals, &c.? Pinch them at the point when three inches in length, and shorten if longer, but not so much at first. If done early, they will make spurs that will be likely to fruit in two years—a few the succeeding season.

GREENHOUSE AND TENDER ANNUALS (*I. F.*).—To bloom them this season, with the assistance of a hotbed, see articles on “Neglected Greenhouse.” Another paper will soon appear, treating of the propagating of some showy kinds for autumn and winter blooming. With your means, you may yet try Cockseombs, Globe Amaranths, *Ipomœa coccinea*, *Browallia alata*, blue and white, *Didiscus (Trachymene) cœrulea*, *Brachycome iberidifolia*, and, as previously mentioned, small annual varieties of *Mesembryanthemums*. If you would be satisfied with small-flowering plants, you might also, as yet, sow the different varieties of *Thunbergia*, Ice plant, Egg plant, &c.; but it is getting late for all tender annuals now, and they will only not disappoint on getting good treatment.

TIME FOR SOWING SALVIAS (*Ibid.*).—Hardy annuals may yet be sown out-of-doors. Greenhouse kinds should be sown in a slight hotbed in spring, and then they will bloom during the summer and autumn. Most of them are so easily propagated by cuttings, that, unless for hybrids, sowing is seldom resorted to, though we generally find that the beautiful blue *S. patens* does as well from seeds, as managed above, as from tubers of the preceding years. Any light, rich loam will do.

FUCHSIA COMPOST (*Kate*).—Sandy fibry loam, and a little rotten dung, or leaf mould, or peat; the first, and weak manure waterings, will grow them admirably. The treatment has often been given—various modes to suit different circumstances, so lately as March 17, No. 233, p. 460.

ASTERS TO BE SHOWN (*Ibid.*).—They had better be grown in rich garden soil, and the flowers thinned a little before showing time, to get them large. They are generally shown cut, but a fine plant, or number of plants in pots, would look well on an exhibition table.

SEEDLING CARNATIONS (*Ibid.*).—Your most economical plan with these, will be to plant them out nine inches apart on a border facing the west, made light and rich, with road-drift and very rotten dung. It would scarcely be worth while to pot them until you see what quality they are. After watering them well, shade a few days from the sun, with netting or evergreen branches.

CACTUS SEED (Z. Z. Z.).—We hardly recollect how long the seedlings are in coming up, but not long in general. The seed should be washed from the pulp; sow in light sandy loam, kept open by a little peat, and plunge in your hotbed. As soon as handable, prick the young things off, and pot when of a suitable size, growing them in heat during summer; and giving them the warmest part of the greenhouse in winter. After three or four years many kinds will bloom. Unless for hybrids, cuttings strike so freely that sowing is seldom resorted to.

DISEASED CHICKENS.—In reply to the very numerous parties from whom I have received dead chickens, and whom it would occupy too much space to answer individually, I may state, that in almost every case the fatality has been caused by some mismanagement; the birds have been either coddled, over-crowded, or badly fed; in one case, the chickens were kept in a warm loft, from which draughts were carefully excluded. In others, they were in a space so confined, that the ground must necessarily have become foul. From the crops of several I extracted hemp seed, large masses of meat, whole barley and wheat. All these circumstances tend to produce disease. Housed chickens pine for fresh, wholesome air, and the natural insect food, worms, &c., which cannot be artificially supplied. Meat and hemp-seed in excess, cause disease, both being unnatural. I believe, that when the hens are allowed to scratch for the chicken, and a supply of grits, or coarse oatmeal, made into a crumbly mass, with water, is given liberally, beginning early in the morning, all that is required in the way of food is supplied, if they have an out-door run among grass, &c. Out of nearly fifty chickens thus treated, mostly Dorkings, with some few Shanghaes and Spanish, I have lost but two, and those were weakly at birth; the nearer we can approach to a natural diet the better, and small seeds, insects, and green herbage, constitute the natural food of gallinaceous birds. Rice is certainly not a good food for young chicken, it contains, by far, too small a quantity of flesh-forming material; but as constituting a part of the food of old birds, I regard it as particularly valuable.—W. B. TEGETMEIER, *Tottenham, Middlesex.*

MILK, BUTTER, EGGS, AND BACON FOR A FAMILY (Clericus).—Keep two cows, make use of the butter required during the summer months, and salt the remainder for use in the winter. The milk not required for use may be given to the store pigs. Keep four store pigs purchased in the spring, at three months old, fed during summer upon milk, &c., and fattened in the autumn upon barleymeal, until they attain the weight of ten or twelve score pounds each. Keep six hens and one cock, to supply eggs and chicken for family consumption. You have six acres of land. Put four acres down in permanent pasture, half of which cut for hay, and feed with cows, alternately. Retain two acres in arable or tillage, to be cropped in the following rotation:—First year, Barley; second year, root crops; forty poles sown with Trifolium, as soon as the Barley is harvested, and sown with Swedish Turnips after the Trifolium is removed the first week in June; forty poles sown with early six-week Turnips, the first thing after harvest; after the Turnips are pulled, plant with early Potatoes; eighty poles to be tilled in the autumn, preparatory for sowing in the spring; forty poles with white Carrots; and forty poles with Mangold. Your six acres of land, will, managed in this manner, give you the following produce:—Summer feed in grass for two cows; four tons of hay for winter feed; five quarters of barley to fatten pigs, and feed poultry; one-and-a-half tons of barley-straw, for fodder or litter; three tons of Trifolium, as green food in spring; four tons of Swedish Turnips, cow food in winter; thirty bushels of early Turnips for sale; forty bushels of early Potatoes for family use, and to assist in fattening pigs; six tons of white Carrots for feeding store pigs and cows in spring, and for sale; one-and-a-half tons of Carrot-greens, cow food in November; seven tons of Mangold, cow and pig food, in spring and early summer, and for sale. The above amount of crops may vary a little in some seasons, but in case the land is well managed, it is a near approach to the result. The labour required will be somewhat regular in this mode of cropping, but "Clericus" must not expect one man to do it; it is, however, not easy to estimate the amount of labour, by reason of the variation of the seasons, and of circumstances in agricultural affairs which can neither be foreseen nor controlled. The profit to be realised will be dependant entirely upon the judgment and industry displayed in carrying out the details of the system laid down, and cannot, therefore, be estimated with accuracy.—J. B.

ROSE STOCKS (B. B.).—The shoots that are to be budded on should not be cut until the new buds have taken, then, if the buds are from autumn-flowering kinds, the shoots may be cut back to within six inches of the bud, which bud will start immediately. The shoots on which Moss or Cabbage Roses, and all such, are budded, need not be cut till the middle of September, and then only to half their length. Make choice of the two or three best shoots for budding on each stock, and nip off the ends of all the rest, and keep them docked all the season, not allowing them more than five or six inches in length, but by no means rub any of them off, as some thoughtless people do.

CAMELLIA-LEAVES SPOTTED (Devonian).—It was not the scale which affected the leaf sent. We have seen two or three instances of the kind in our practice from a bad state of the roots. Some Vines are thus affected every year, but, as they cast their leaves, the evil is not heeded so much. Your plant may have had the disease nine or ten years, and if so, and that it spreads annually to the young leaves, all the gardeners in the world cannot cure it.

RHODODENDRON EDGORTHII (Ibid).—It was named by Dr. Hooker in compliment to the M. Edgworth after whom *Edgorthia* was called.

MR. FISHER HOBBS (Cymro).—A letter directed to him at the Farmer's Club, York Hotel, Bridge Street, Blackfriars, will certainly reach him. The Improved Essex differs in many points from the Improved Berkshire breed of Pigs; they are smaller boned, and usually all black.

ARRANGEMENT OF THE POULTRY YARD (Rusticus, A. B.).—There is no mode of teaching Shanghae, or other cocks, to be at peace with each other. We put one cock, five hens, and half our cockerels in one walk, and the same numbers in another walk. Our pullets we keep by them-

selves. *Shanghae cockerels* acquire their wing quill feathers earlier than the pullets; but *Shanghae pullets* acquire their tail feathers, and general plumage earlier than the cockerels.

THE COTTAGE GARDENERS' DICTIONARY (Mullum in parvo).—It gives the cultivation of plants. Price 8s. 6d. The roots of vines are best inside the house.

TOOL-HOUSE (Juventus).—Any shed, with a shelf and a few hanging hooks, will answer. No plan can be required for such a structure.

CALCEOLARIA SEEDLINGS (A. N. V.).—Every one shrivelled up. (M. H.).—Here is a contrast! the blooms came perfectly fresh, being packed between films of damp moss, in a tin box. No. 5, Creamy-yellow, with very distinct circular crimson blotches; form good. We should call it "Clown," for it reminds us of Grimaldi's face. No. 15, Bright crimson, with creamy edge round the mouth and outer margin; good form. No. 23, Very like No. 5, but more closely blotched. No. 40, Dark crimson, very regularly veined with pinky-white; excellent in form and colouring. No. 62, Yellow, with very closely-clustered blotches of dark maroon; form good. The other specimens ordinary, but, as a whole, the best collection of Calceolaria seedlings we have seen this year.

DESTROYING CATERPILLARS (J. Pine).—Dust them with white hellebore powder.

BEES—EARLY SWARMS.—We are informed of a swarm near Sheffield on the 16th, and another on the 24th of May.

WATER CRESS (A. Mansfield).—You will find its garden culture, without a stream of water, in our No. 61, page 117.

GOOSEBERRY GROWING (R. J. C.).—The only good modern work is published by Mr. Bobn. It is entitled "The Gooseberry, its culture, uses, and history."

STRAWBERRIES (W. Blood).—The Hautbois and British Queen Strawberries not bearing when growing together, was not owing to such neighbourhood. They have been rendered fruitful, probably, by having their luxuriance checked by the destruction of some of their roots in the course of transplanting.

VINE MILDEW (W. C. P.).—We know of no remedy but repeated dustings with sulphur. They should be applied immediately the fungus is perceived. In the winter, when the leaves are all off, dress the vines, and fumigate the house, as was recommended by Mr. Errington some months' since.

PANSIES (J. B.).—We know of no work about them. If you refer to our Indexes, you will find all the information you require.

BEES: EARLY SWARMS.—"I quite agree with the writer of your Apianian's Calendar for June, as regards the unfavourable character of the present spring for Bees; but there must be a great difference in the state of stocks, in respect to swarming, as in the neighbourhood of Leeds, swarms are becoming numerous. A friend of mine had one come off on the 19th of May; another party had two on the 23rd; and I had one on the 26th, and a very good one. It is three days earlier than I ever had one before, although I have kept bees the last sixteen years; probably, it may be accounted for, by the last season being more favourable in the northern than the southern part of the country. The above swarms are all from stocks kept in the common cottage straw hive.—T. UNPLEBY, *Roundhay, Leeds.*

NAMES OF PLANTS (J. S.).—We could not recognise your plant, but have been told that it is *Vicia Narbonensis*, var. *integrifolia*. If so, it is an annual, and used in some parts of France as we use tares. (A Subscriber).—Yours is *Dielytra spectabilis*. (W. C. P.).—*Cerasus padus*. (Scholasticus).—*Cerasus serotinus*. We know of no mode of destroying furze of gorse so effectual as grubbing it up. Cutting it down repeatedly, and salting it heavily, might overcome it. (G. B. C.).—*Ribes speciosum*, or Showy-flowered Currant.

BLACK BEETLES.—C. S. A. obliges us with the following:—"Having a decided antipathy to those household pests, I feel for those who are infested by them. 'Roth and Ringersen's patent phosphorus paste, or vermin destroyer,' may be considered an effectual remedy, if persevered in for a short time. We entered a house in March, 1852, where we found them swarming in kitchen and cellars. The application of two sixpenny jars cleared them entirely away. At the commencement of warm weather last month, two or three made their appearance; we applied our old remedy, and have seen no more. It can be had at most oil shops, in 3d, 6d, and 1s. jars. Dallow, at Kingsland Gate, keeps it. Cats and dogs will not touch it."

BLACK BEETLES—BEE GLASSES.—W. L. T. says "In THE COTTAGE GARDENER you ask for a mode of exterminating Black Beetles. I think if you try pieces of the rind or skin of the cucumber, laid in their track at night, you will find them quickly diminish. Also, 'J. W.' wishes to know where *flat Bee Glasses* are to be obtained. I have bought several of Marriott, 72, Gracechurch Street, City, and you can also order them to be made at any manufacturers; indeed, I think there is one man in Bishopsgate Street Without, who has them ready, but I do not know his name."

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WEEKLY CALENDAR.

M D	W D	JUNE 23—29, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
23	Th	Goat Moth; willows.	29.849 — 29.717	72—47	S.W.	—	45 a. 3	19 a. 8	10 47	17	1 49	174
24	F	MIDSUMMER DAY. NAT. JN. BAP.	30.075 — 29.950	76—44	W.	01	45	19	11 18	18	2 2	175
25	S	Cinnabar; heaths.	30.048 — 29.904	74—57	S.	01	46	19	11 40	19	2 14	176
26	SUN	5 SUNDAY AFTER TRINITY.	29.814 — 29.708	71—52	S.W.	32	46	19	11 59	20	2 27	177
27	M	Coronet; trees.	29.824 — 29.760	71—51	S.W.	12	47	19	morn.	21	2 39	178
28	Tu	Q. VICTORIA'S CORONATION 1838.	29.736 — 29.761	68—56	S.W.	04	47	19	0 14	22	2 52	179
29	W	St. PETER.	29.787 — 29.715	67—53	S.W.	03	48	18	0 31	23	3 4	180

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 73° and 50.2° respectively. The greatest heat, 88°, occurred on the 23rd in 1816; and the lowest cold, 35°, on the 23rd in 1851. During the period 112 days were fine, and on 70 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 133.)

FUMARIA PARVIFLORA: Small-flowered Fumitory.



Description.—It is an annual. Herb, about six inches high, like *Fumaria officinalis*, but rather smaller in every part. Segments of the leaves very narrow, line-like and channelled, not widening in any part, all uniform. Bractes

longer in proportion to the flower-stalks, rather awl-shaped. Flower not more than half the size of *F. officinalis*, pale red, occasionally white; tips of the inner petals purple, in a loose cluster. Pod globose with a point, not abrupt, nor notched, single-seeded. This is doubtless a very distinct species from *F. officinalis*, and, as Professor Decandolle remarks, has no relationship to *F. spicata*, whose terminal spikes, and oval, flat, thick-edged, dotted pod, are abundantly characteristic.

Places where found.—Corn-fields in the south of England. Time of flowering.—August to September.

History.—This was not distinguished as a separate species until Lamarek published his "Encyclopædia of Botany" at the beginning of the present century. Besides being found in England and Southern Europe, it is also a very common weed in the East Indies, being called in Hindoostanee, *Sulphur-Saug*, but Dr. Ainslie, in his "Materia Medica of Hindostan," says, it is also known by the name of *Pitpatra*. The Mahomedans there employ it as a diuretic, as well as a deobstruent, and in maniacal cases.

The old herbalists all speak of the Fumitories as medicines useful if administered with similar objects as by the Indian Mahomedans; and both, probably, derived the suggestion from their Arabian predecessors and teachers in the art of healing. It is deserving of notice, that the Fumitories contain a peculiar acid, which has been called *Fumaric Acid*, but which is also known as *Lichenic* or *Parmelic Acid*, because it is also a constituent of Iceland Moss, *Lichen islandicus*, or *Parmelia pulmonaria*. (Smith. Donn. Withering. Thomson. Duncan.)

INFORMATION received from various districts leads us to the conclusion that the fruit crop throughout England will be much above an average, with the exception of Plums. Apples, from Kent to the farthest corner of Devonshire, are in profusion, and Pear-trees are no less heavily laden. Those grafted on Quince stocks, which usually blossom so early as to be cut off by the spring frosts, are this year well cropped. This was owing to their much later blooming. Cherries are more partial, but of the later varieties the crop promises to be abundant; we say promises, because until the stoning period is well over, the produce is not secure. Indeed, there are three perils of the Cherry—the setting, the stoning, and the colouring—to say nothing of the birds. Of Strawberries, generally, there is a vast abundance; the chief failures being among those who manure their ground too highly. Keen's Seedlings were ripe in the open ground near Winchester on the 20th inst. Currants and Gooseberries are bearing the largest crops that have been known for many years, indeed, so abundant are they in places that we have numerous queries how best to employ them. The following extract from one of Poole's stories may be suggestive.

Mr. Poole, meeting the retired landlord of one of the inns he frequented at Cambridge in his days of pupilage, the following conversation occurred:—

"You can't deny it, Burley; your wines, of all kinds, were detestable—port, Madeira, claret, champagne—"

"There now, sir! to prove how much gentlemen may be mistaken, I assure you, sir, as I'm an honest man, I never had but two sorts of wine in my cellar—port and sherry."

"How! when I myself have tried your claret, your—"

"Yes, sir—my claret, sir. One is obliged to give gentlemen everything they ask for, sir; gentlemen who pay their money, sir, have a right to be served with whatever they may please to order, sir—especially the young gentlemen from Cambridge, sir. I'll tell you how it was, sir, I would never have any wines in my house, sir, but port and sherry, because I know them to be wholesome wines, sir; and this I will say, sir, my port and sherry were the—very—best I could procure in all England."

"How! the best?"

"Yes, sir—at the price I paid for them. But to explain the thing at once, sir. You must know, sir, that I hadn't been long in business when I discovered that gentlemen know very little about wine; but that if they didn't find some fault or other, they would appear to know much less—always excepting the young gentlemen from Cambridge, sir; and they are excellent judges!" [And here again Burley's little eyes twinkled a humorous commentary on the concluding words of his sentence.] "Well, sir; with respect to my dinner wines I was always tolerably safe; gentlemen seldom find

fault at dinner; so whether it might happen to be Madeira, or pale sherry, or brown, or—

"Why, just now you told me you had but two sorts of wine in your cellar;"

"Very true, sir; port and sherry. But this was my plan, sir. If any one ordered Madeira:—From one bottle of sherry take two glasses of wine, which replace by two glasses of brandy, and add thereto a slight squeeze of lemon; and this I found to give general satisfaction, especially to the young gentlemen from Cambridge, sir. But, upon the word of an honestman, I could scarcely get a living profit by my Madeira, sir, for I always used the best brandy. As to the pale and brown sherry, sir—a couple of glasses of nice pure water, in place of the same quantity of wine, made what I used to call *my delicate pale* (by the by, a squeeze of lemon added to *that* made a very fair Bucellas, sir—a wine not much called for now, sir): and for my old *brown sherry*, a *little* burnt sugar was the thing. It looked very much like sherry that had been twice to the East Indies, sir; and, indeed, to my customers who were *very* particular about their wines, I used to serve it as such."

"But, Mr. Burley, wasn't such a proceeding of a character rather—"

"I guess what you would say, sir; but I knew it to be a wholesome wine at bottom, sir. But my port was the wine which gave me the most trouble. Gentlemen seldom agree about port, sir. One gentleman would say, 'Burley, I don't like this wine—it is too heavy!' 'Is it, sir? I think I can find you a lighter.' Out went a glass of wine, and in went a glass of water. 'Well, sir,' I'd say, 'how do you approve of *that*?' 'Why—um—no; I can't say—' 'I understand, sir, you like an *older wine—softer*. I think I can please you, sir.' Pump again, sir. 'Now, sir,' says I (wiping the decanter with a napkin, and triumphantly holding it up to the light), 'try this, if you please.' 'That's it, Burley—that's the very wine! bring another bottle of the same.' But one can't please everybody the same way, sir. Some gentlemen would complain of my port as being poor—without body. In went one glass of brandy. If that didn't answer, 'Ay, gentlemen,' says I, 'I know what will please you—you like a fuller bodied, rougher wine. Out went *two* glasses of wine, and in went *two or three* glasses of brandy. This used to be a *very* favourite wine—but *only* with the young gentlemen from Cambridge, sir."

"And your claret?"

"My good wholesome port again, sir. Three wines out, three waters in, one pinch of tartaric acid, two ditto orris-powder. For a fuller claret, a little brandy; for a lighter claret, more water."

"But how did you contrive about Burgundy?"

"That was *my claret*, sir, with from three to six drops of bergamot, according as gentlemen liked a full flavour or a delicate flavour. As for champagne, sir, that of *course* I made myself."

"How do you mean 'of course,' Burley?"

"Oh, sir," said he, with an innocent, yet waggish look, "surely everybody makes his own champagne—*else what can become of all the gooseberries?*"

THE *Potato Murrain* was noticed less generally among forced crops this year than usual, but we hear that it has made its appearance extensively among the open ground growths in some districts of Cornwall. We shall be glad to receive information from any or from all our readers how the Potato crop is looking in their neighbourhoods, for it is a crop even of more importance than the fruit-crop. In Hampshire, at present (June 16th), Potatoes are looking well.

We may as well remark, in connection with this subject, that a continental philosopher recommends, as a prevention of the disease, that *roasted Potatoes* should be planted. Without any joke, M. Bollman, a professor at the Russian College, at Gorigoretsky, states

that he has dried, at a high temperature, 140°, or thereabouts, the sets intended for planting, and that the plants from such sets were undiseased, while those from undried sets were severely affected. This may, or may not, prove correct upon further trial; the high temperature and long drying may ripen the tubers; may produce chemical changes in the sets, that may enable the plants to produce tubers not prone to what may be compared to cancer in the human body—decomposition during life. All this *may* be, but it is mere hypothesis; but the asserted fact deserves to be extensively tested. We think this present season too far passed to allow of the experiments being conclusive, for even if the high drying failed in the alleged preservative effect, it might be justly observed that the tubers have so generally sprouted now, as to weaken them, and render them unusually liable to the murrain. However, those who have the opportunity might try the experiment. Many years ago, when the murrain had not been heard of, we knew a very good crop of Potatoes taken up in October from sets planted on the 25th of July.

For the following list of plants that have endured the winter uninjured in Oxfordshire, we are indebted to "Queen Mab," but we pledge ourselves that the statements are facts in all human acceptance, and that they are not "fictions of the fay-land":—

"*Indigofera decora*, border near a wall; *Gazania rigens*, in open border; *Oxalis floribunda*, in open border; *Zephyranthes Atamasco*, in open border; *Pittosporum Tobiri*, against a wall; *Physianthus albicans*, against a wall; *Edwardsia grandiflora*, against a wall; *Passiflora carulea*, *Escallonia macrantha*, *Benthamia fragifera*, *Buddlea Lindleyana*, all on a wall, protected with fir boughs; *Thea Bohea*, on a wall; *Stranvesia glaucescens*, in open ground; *Calceolaria*, common yellow, bedding kind (I think *Angustifolia*), in a wide basket, on a stone pillar, on an open lawn; *Laurus regalis*, protected by a fir bough; *Grevillea rosmarinifolia*, on a wall unprotected; *Azara integrifolia*, in a border, protected by a fir bough; *Escallonia rubra*, in open border; *Eriobotrya japonica*, protected with fir boughs on a wall; *Ceanothus divaricatus*, in open ground; *Billardiera longiflora*, on a wall. None were protected except those specified. *Sollya heterophylla* was killed, though on a wall protected."

At Messrs. J. Weeks and Co., King's Road, Chelsea, the open-heated Pond is now very gay with Stove Aquatics. *Lymnocharis Humboldtii* is very strong, with a profusion of lovely sulphur flowers. The Rock, also, surrounding the Pond, presents a very brilliant appearance with Alpine Plants in full flower.

THE *Orchids* from Mr. Warszewicz, sold at Mr. Stevens's Auction Rooms, on the 14th instant, realised very good prices—the 83 lots fetching about £235. Lot 1, *Cypripedium caudatum roseum*, which flowered on the voyage to England, the flowers being of a rich purplish-crimson, sold for £7 10s.; the other specimens changed hands at prices varying from £2 to £6 15s. The plants of *Trichopilia suavis* sold for from £2 2s. to £4; and *Tri-*

chopilina coccinea, a variety with "erect flower-stems, sepals and petals white, with the lip deeply tinged with purplish-crimson," similarly varied in price.

WE thought that a *Shanghae Pullet*, aunt to some of the chickens belonging to G. W. Johnson, Esq., of Winchester, highly commended at the Farningham Show, was the most prolific of eggs that we had ever known, but we are glad to find that others are equally fertile. We are glad, because these instances bear testimony that the propensity to broodiness, complained of as characteristic of Shanghae hens, probably may be obviated by selecting for stock birds from a parent not having that propensity. The pullet to which we have alluded began laying on the 15th of December, and between that day and the 16th of June, or 183 days, she has laid 163 eggs. Her eggs weigh, with scarcely any variation, two ounces each, so that in twenty-six weeks she produced nearly 20 lbs. weight of food, as some deduction must be made for the weight of the shells.

The other pullets, which equal the above in productive power, are the property of W. H. Snell, Esq., of Norwood, Surrey, whose most beautiful chickens took the first prizes at Cheltenham and Plymouth. He has favoured us with the following information relative to these pullets:—

"I notice that one correspondent gives a return of the number of eggs laid by his hens for several successive months, and your note, that other returns of a similar nature would be acceptable, induces me to send you a statement of the number of eggs laid by the two hens from which I have reared the majority of my chickens (about 150) this year; including those which—beating the cracks—took the first prize at Cheltenham, and at Plymouth. On the accuracy of the return you may depend, for the eggs were different in shape and colour from those of any other bird in my yard; and, as often as otherwise, were taken from under the hens that laid them; and the daily eggs were regularly entered in a book, from which I take the following return:—

FIRST PULLET,

27 Nov., 1852, to 13 June, 1853, 199 days, 174 eggs;

SECOND PULLET,

30 Dec., 1852, to 13 June, 1853, 166 days, 137 eggs;

which, considering the average weight of each egg to have been no more than 2 oz., gives a total weight of of 38 lbs. 14 ozs. of meat, in about six months, from two hens, both of which are still laying eggs that produce fine chickens. And, remembering the cold, wet weather we had, for nearly three months uninterrupted, I think this fully establishes the superiority of the now fashionable and really valuable Cochinchina fowl."

So fatal is the disorder in Chickens, known as *the Gapes*, and so difficult is it to apply any remedy to so sensitive an organ as the windpipe, the seat of the disorder, that we do not hesitate to give prominence to this important

notice from Mr. Tegetmeier, more especially as it will be a reply to the enquiries from various correspondents.

"In answer to numerous enquiries, I may state, that fumigation with spirits of turpentine has been found efficacious in the cure of this disease. The chicken may be put into a box, along with some pieces of rag, or paper, saturated with the turpentine, and made to inhale the vapour as long as they are able to withstand its action; or they may be put under a glass shade, standing over a hole in a board, some turpentine on paper being burned beneath the hole. I hope to return more fully to this matter next week, as I have received several valuable communications on the matter.—W. B. TEGETMEIER."

GLEANINGS.

ONE of the best works on "*The Dahlia: its History and Cultivation, with descriptions of all the best show flowers*," has just issued from the press. Its author is Mr. Robert Hogg, author of "*British Pomology*," and of a name identified with Florists' Flowers. The following is an extract from its amusing portion: our readers must purchase the work to benefit by its practical details:—

"The first naturalist who was sent to explore the hitherto unknown treasures of the New World, was Franciscus Hernandez, physician to Philip the Second of Spain, under whose patronage, and at a great cost, the mission was undertaken. In such a country, where no botanist had ever trodden, the success which attended his labours was of course very great. So extensive were his discoveries, and so new and varied were the forms of animal and vegetable existence which he described, the scientific men of that age regarded his statements with suspicion, and, in some instances did not fail to express their incredulity in what they supposed to be the traveller's fabulous assertions. Notwithstanding, however, the opinions which at the time were current, it is now found that in every particular he was correct in what he had stated. Hernandez did not live to superintend the publication of his discoveries; but after his death they were collected into one large folio volume, profusely illustrated with woodcuts, and entitled, '*Rerum Medicarum Novæ Hispaniæ Thesaurus*.' In this work the *Acoccolli* is figured in three different forms, and described at considerable length. It is stated to be an herb bearing leaves similar to those of the Mountain Spikenard (*Valeriana tuberosa*, Wild), which are divided into five leaflets, of which some are sinuated. The flower-stalks, which are nine inches long, are slender and smooth; and the flowers pale red and stellate. To this is added an account of its medicinal virtues, which we suspect are more imaginary than real. This, then, for one-hundred-and-fifty years afterwards, was all that was known of this plant; those who believed the report of the traveller knew that such an one existed somewhere in the mountains of Quauhnahuac, but nothing more, for there it was allowed to remain.

"It was not till 1789, when Vicentes Cervantes, director of the Botanic Garden at Mexico, forwarded seeds of this plant to the Royal Gardens at Madrid, that it had ever been seen in Europe. The plants produced from these seeds flowered in 1790. At that time the Royal Gardens were under the direction of Abbe Cavanilles, who, recognising in this new introduction a genus hitherto unknown in botanical science, applied to it the name of DAHLIA, in honour of M. André Dahl, a Swedish botanist. Among the plants produced in the Madrid Garden, Cavanilles discovered, as he thought, three distinct species, all of which he described and figured in his great work, '*Icones et Descriptiones Plantarum, &c.*' under the names of *Dahlia pinnata*, *rosea*, and *coccinea*, the former of which was a sort of semi-double, but the others proved only to be single flowers. Little

progress seems to have been made in their cultivation, and it is doubtful whether any attempt had been made to multiply them from seed, for so long as ten years after their first introduction we find Cavanilles distributing to various Botanic Gardens in Europe the identical three varieties he had first raised. It was not till 1802 that they were sent to the Jardins des Plantes, at Paris; and about the same time they were also forwarded to M. Decandolle, at Montpellier. The Gardens of Berlin and Dresden seem to have had them some time before this, for so early as 1800 we have an account of *Dahlia rosea* being sent from Dresden to Berlin. About the period that Cavanilles sent his plants to the Jardin des Plantes, at Paris, the illustrious naturalists, Humboldt and Bonpland, in descending from the table land of Mexico towards the coast of the Pacific Ocean, found the Dahlia in a prairie between Areo and Patzcuaro, at a height of nearly five thousand feet above the level of the sea. The plants then discovered were transmitted to the Botanic Garden at Mexico, and in 1804 transferred to the Jardins des Plantes, and several other gardens throughout Europe, and among them was found the *D. coccinea* of Cavanilles. On its first reception, in 1802, in the Paris Garden, M. André Thouin, director of that establishment, judging from the climate of the country of which the Dahlia is a native, had it placed in a stove and treated as a tropical plant. In 1804 he published an elaborate treatise, illustrated with engravings, in the 'Annales du Museum d'Histoire Naturelle,' on its culture and management; but from all we can discover it was many years after this before any progress was made in the production of good double flowers.

"Till about this period, the generic name established by Cavanilles had been universally adopted by botanists throughout Europe; but Professor Willdenow, of Berlin, labouring under the impression that the name adopted by Cavanilles had been previously applied to another plant by Thunberg, he, in the fifth volume of his 'Species Plantarum,' discontinued the name of Dahlia, and substituted that of *Georgina*, which he founded in honour of Professor Georgi, of St. Petersburg.* For some years this new nomenclature was pretty generally followed, particularly in Germany and central Europe; and even so recently as in some of the writings of Loudon, in our own country, it was preserved; but as it was clearly shown that the precedence must be given to Cavanilles, the name of Dahlia was again restored, and still continues, as in all probability it ever will, to be associated with this now justly popular and noble flower.

"Several cultivators on the continent, observing the natural disposition of the Dahlia to sport from its original form, began now to direct their attention to raising new varieties, and treating it as a florist flower. Many attempts were made to procure double flowers, but without success. In 1806, the gardener at Malmaison forwarded to the gardener at St. Cloud all the three varieties which were then known, namely, *coccinea*, *purpurea*, and *crocea*. These produced seeds, which were sown, but, notwithstanding all the attempts which were made year after year, they still remained single. In Belgium, however, they were more successful; for we learn that in 1812, M. Donckelaar, botanic gardener at Louvain, having sown a quantity of seed, raised plants which the first year produced all single flowers. Disappointed, but not discouraged, he from these saved a second quantity, which in their turn produced semi-double flowers; and, emboldened with the success which attended this second essay, he from the best of these semi-double flowers procured a further supply of seed, the produce of which, in the following year, presented him with three plants which bore flowers perfectly double. These were, therefore, the first really double flowers which were ever produced. After this there were many varieties raised of all shades and depths of colour, and from this time the Dahlia began to attract for itself a measure of interest which has gone on increasing, and which even at the present day seems to be as great and unabating as if it were a plant of the most recent introduction, and which was still a novelty in the midst of us.

"Hitherto, we have been treating of the Dahlia as a plant

* "In a recent number of the 'Revue Horticole,' a correspondent goes a long way out of his road to indulge in a spiteful ebullition against 'les Anglais,' because they have, as he says, taken the honour from the Swedish botanist by changing the name of Dahlia to *Georgina*, in honour of one of their Kings—George!"

confined exclusively to the continent; it must not, however, be inferred from this that it was not known and appreciated as soon, and as greatly, in our own country. The first account we have of its introduction to this country was by the Marchioness of Bute, in 1789, from Madrid, where the Marquis was then residing as ambassador from England at the court of Spain. It does not appear that the roots or seeds, whatever they were, had been duly tended or taken care of, for certain it is that it never became generally known, or was ever even partially distributed. In all probability it shared the fate of many hundreds of other plants which at that period were sent home by collectors and travellers to Kew Gardens. The space for the continual accessions which were taking place was far too limited, and the consequence was that a large number of the plants perished, either from neglect or too much crowding. The same liberal spirit which now exists in that establishment did not prevail in those days, by which new plants are disseminated throughout numerous large public and private establishments in the country; so that if the original plants in the Royal collection should be lost, a fresh supply can always be procured from those to whom they had been supplied. It was not so at the time of which we are writing, and the consequence was, when a plant which was unique died, it was entirely lost to the country. Such was the case with the Dahlia, for, besides the mere fact of its introduction, nothing more was known of it till 1804, when seeds were again forwarded from Madrid—on this occasion by Lady Holland. A plant of the *Dahlia coccinea* had, however, been in the country before this, because John Fraser, the celebrated traveller, who established a nursery in Chelsea, had flowered it in 1803. On the occasion of this second introduction, seeds were forwarded to M. Buonaiuti, who was at that time librarian to Lord Holland, at Holland House, Kensington. This gentleman was successful in raising all the three varieties, and as they flowered they were illustrated in the leading botanical periodicals of that day. Great attention was paid to the cultivation of the Dahlia in this country, and with various degrees of success; but it is only within the last twenty years that it has been brought to that degree of perfection which now constitutes it one of the most attractive of our florist flowers."

COVENT GARDEN.

THERE has been, of late, an unusual display of fine FORCED FRUIT in the market, in consequence of so many exhibitions happening about the same time. Many of the prize specimens which were produced at Chiswick, and the Regent's Park shows, find their way, at last, to Covent Garden. Of these, there are splendid specimens of *Peaches* and *Neectarines*, of large size and finely coloured. *Grapes*, also, of unusual size and colour, consisting of White and Grizzly Frontignan; Muscat of Alexandria, and Black Hambro'. *Strauberies* are now much more plentiful, and, instead of being sold by the ounce, may be had by the pottle, or punnet; we have observed some offered at 1s. 6d. per pottle. There are also beautiful specimens of early *Cherries*, but not quite sufficiently coloured. They are evidently forced, or are from a southern district. The sorts are, May Duke, Black Tartarian, and a few of the Early Purple Guigne. We also observed a few of an early variety, which has been introduced to this country of late years, called *Indulle*. Green *Gooseberries* are very plentiful, and make 4d. per quart. *Asparagus* is very plentiful, but not cheap—anything good cannot be had under 3s. 6d. or 4s. per bundle. *Early Peas* are in, and make 1s. per pint. *Early Potatoes*, 8d. per lb., of good quality; but some may be had at 6d. VEGETABLES are improving fast

under the influence of the recent rains and sunshine. *Cabbages* make from 1s. to 2s. per dozen. *Rhubarb*, 2d. to 6d. per bundle. *Cucumbers*, 4d., 6d., to 1s. each.

Of FLOWERS there is an abundance. Among the most prominent in the composition of bouquets, we have lately observed *Catananche cœrulea* extensively used for a blue. H.

SEA-KALE.

I HAVE long desired to give our readers a sketch of my mode of growing and forcing this valuable esculent, and as there is no pressing need for the remainder of the series of papers which I have commenced, on laying out fruit-gardens and orchards, it will be well, perhaps, to turn aside occasionally into subjects which may interest our friends, who have not had the benefit of long experience. I feel somewhat bold in the matter of Sea-kale, having been particularly successful for many years; indeed, I think it may be found, that the improved practice in forcing this vegetable, is, in great part, traceable to papers written by me nearly a score years since, in "Loudon's Magazine," and since that period, in the "Horticultural Society's Journal," and other works.

Twenty years since, and more, I felt extremely dissatisfied with the existing mode of forcing; it appeared too expensive, too uncertain, and involved too much labour. Long before that period, Mr. Knight, and others, had ascertained that certain classes of plants, of which the Sea-kale was an eminent example, stored up in one season the alimentary matter that went towards establishing the plant in the future year, and the accretion consequent on the root action of the latter, of course, provided for another period, and so on. Now, this admitted, two features in its culture stood in bold relief; one, that all matters connected with the cultural process must be done out-of-doors; the other, that the forcing was reduced simply to a question of warmth and moisture, irrespective of any other consideration. Thus, the fetters being thrown off which custom had bound, it occurred to me, that, since Sea-kale blanching-pots were very expensive, and that the enormous body of fermenting material requisite to support this system could be much better employed, and much labour in turning and heating saved—a much simpler plan might be devised.

Now, here I at once repudiate all notions of battling with Mr. A. or Mr. B., as to priority in this respect. I shall confine myself to a detail of useful facts; the world may settle the rest as it pleases.

Sea-kale is partial to a light or sandy soil, and the soil must be deep to produce it first-rate. I always secure a depth of thirty inches. A Celery-bed, in what is termed the Scotch fashion, is a most excellent preparer. These beds with us are about six feet in width, and carry two rows of highly-cultivated Kale. I need scarcely observe, that such ground is highly manured, and very deep, and receives a good coating of salt after the Celery is removed, which is generally immediately after Christmas, as we employ an early bed for this purpose. The salt, of course, is well incorporated with the soil.

On such a prepared soil I annually plant as much as I force—say about two hundred crowns or roots. The rows are nearly four feet apart, and the plants nearly three feet apart in the row, or rather three feet between *each pair of plants*, for I plant a pair of crowns at each station; each pair, therefore, has about half-a-yard on each side, clear space, to extend on.

Now, it is proper here to observe, that these are young plants of a year-old, for I sow a drill annually for

this purpose, on rich soil, and cultivate highly through the summer; they are about a foot in length, and nearly an inch in diameter at the crown at planting time. Our planting takes place in the middle of February.

In the early part of May most of them produce blossom spikes; these, however, are not suffered to grow long, for as soon as the plant has two or three good leaves at the base the blossoms are pinched off. In former years, I used to cut the crown off *below the sprouting point*, but this proved bad practice, although backed by many professionals—as, although Kale will bud at any point, such practice lays the foundation for canker, or vegetable gangrene, to which this plant is much liable. This pinching, or cutting away, the blossom spikes induces a development of a class of young shoots at the collar, which are the very things for future buds, or crowns; and, moreover, no stagnation of the vital action ensues—the root is sustained in continuous play.

In a few weeks, the crowns are found thronged with sprouts of a peculiarly vigorous character, and now a sharp-pointed knife is passed through them, thinning out all but about four on each crown, and, of course, selecting the prime ones.

I need say little more about the out-doors culture of this delicious and universally esteemed vegetable, which finds its way to the table of Princes from November until the middle of May: of course, a due amount of cultivation will be given. I must now bound over a portion of my subject, and chat a little about its forcing. I may observe beforehand, however, that I have deemed it expedient to use a good deal of the charred materials of the rubbish or weed yard on every possible occasion, whether in the soil, or as hand-dressings, when dressings are needed. Such substances are well-known antiseptics, and, as the Kale is so liable to gangrene, their application would seem a common sense affair. However, I can only say, that in proportion as I have applied such with diligence, my success has increased; indeed, I cannot speak too highly of their application in almost all vegetable culture—involving, as a system of charring does, the destruction of all insects, and the return of a very useful residuum to the ground from whence it had been taken.

During the summer, of course, all flower stems are cut away, and by the end of October, or so, the leaves will be relinquishing their hold of the plant. And now, my practice is to trench out the whole forcing stock, and "lay it in by the heels," to use a mere gardening phrase, which means, that it is put into the ground as close together as possible. It is covered with soil up to the crown, and, during severe weather, litter is kept constantly over the plants. From hence they are transferred, in successive batches, to the Mushroom-house, where I have Kale in constant succession, from the beginning of November; until that from the open ground supersedes forcing matters. The forcing it in this situation must form the subject of another paper; for much may be said, and much ought to be said. I do not, indeed, desire to make a more wordy affair of it; but I am unwilling that those who do wish to learn a good practice should be imperfectly informed: for those who do not desire to learn, we do not write; neither for men of experience.

Before closing this paper, let me point to the collateral bearings of this kind of practice. "Rotation of crops" always carries a high sound; a good knowledge of this involves much practical, if not scientific, knowledge; much forecast, and, I may add, it must lead to economy in the end. Here, then, is my plot of "trenched-out" Sea-kale ground, penetrated some thirty inches in depth, and ridged up in November. Who will despise such a plot in March for Carrots, Onions, &c.? Certainly, a bed, fifty yards long by seven feet in width, does not seem a great commercial spec. But it is not for the amount of

land I contend, but the principle—the present and ultimate economy. Sea-kale stands classed in my rotation book as a “*Preparer*.” Such a division, or classification of cultural matters is of immenso importance; would that all our young aspirants for horticultural fame would condescend to study such genuine utilitarian matters; but the floral taste rules, I fear, supreme.

R. ERRINGTON.

(*To be continued.*)

HORTICULTURAL SOCIETY'S EXHIBITION.—

JUNE 11, 1853.

I HAD more cause to be well-pleased on this occasion than generally falls to my lot on show days. I had a privileged pass from the Society to go in and out when I chose, so that I had it all to myself until the public were admitted; the judges had enough to do without gossiping; and I never knew any of our aristocracy, who are admitted, with distinguished foreigners, to view the exhibition before mid-day, to intrude on the time of the judges or reporters by asking this, that, or the other, about the plants, and so forth; but the moment the gates are opened, and the tide rolls in, one-half of the gardening world seem to think that the other half have nothing else to do but stand about and idle their time away, as if no leading articles or reports had to be prepared. I was more free from this annoyance that day than I ever remember.

In the SEEDLING tent there was one White *Fuchsia*, called *Charmer*; a good scarlet *Rhododendron*, called *Ponticum coccineum*; several *Calceolarias*, of which *Reubens*, *Masterpiece*, and *Charmer*, were the best among the dark ones; and of the spotted ones, *Hillingdon*, *Bertha*, *Constantine*, *Pygmalion*, and *Liliputian*, were the best for distinctness of coloured marking; and there was one seedling *Calceolaria*, called *Enchantress*, as near to scarlet as could be about the throat and front, but the bottom was yellow. Not one of these seedlings, however, were nearly so good as those I had myself, and saw with Mr. Wilmore, near Birmingham, in 1835 and 1836.

In GERANIUMS, *Boule de Neige* was there again; it is the best white that has been yet exhibited of the horse-shoe kinds, and will make a rich bed or edging. I have a seedling, which flowered this week, with a better white, and as large a truss, as the *Snowball*, but the shape of my flower is not nearly so good: a cross between the two will establish the long-wished-for “White-scarlet Geranium” in perfection. *Glaucum grandiflorum intermedium*, a most stupid, rigmarole of a name, was a very, very pretty-habited flower-bed Geranium, of the wild African class, with small, clear white blossoms, and only a little speck of black at the back. If it flowers to the end of the season it will be valuable in the flower-garden; and if it seeds, it will be still more so; but the name is enough to frighten any lady from having it, and I heard so much from good judges of such things that day.

Of the Fancies, *Constance* is my favourite; it belongs to the same section of them as the *Hero of Surrey*; these are all black and white. *Lady Hume Campbell*, a deep crimson all round, with a white edge, was the best of that class. The following were the next best—*Rosalind*, *Loveliness*, *Hebe*, *Jeanette*, *Illuminata*, *Cupid*, and *Bird of Paradise*. I may as well tell, that ladies cannot bear to look at such flowers as *Madonna* and *Fairy*, the next two best seedlings; they have a faint lilac blotch on a sickly white ground. I once burned my fingers with a better flower than either of these, which I proposed to name after an honourable lady. It is now called *Countess*, and a seedling between it and *Glaucum grandiflorum intermedium* would make the best pure

white fancy Geranium, for a bed, of all that I can suggest. I know *Countess* will seed and carries pollen.

ROSES.—I had a full view of the Roses to-day without hindrance; they were splendid, but not nearly so much so as in May. Paul's *Queen Victoria* I now saw in perfection for the first time; it ranks in the largest class of Roses, is pure white in the outward petals, with a blush towards the centre. I do not know or care how the florists like it, but it is a first class Rose for a lady. The best yellow is the *Tea Viscountess de Cazes*, but is not a good pot Rose by any means, as it seldom comes in a good form from a pot; I have seen it perfect on a west wall. *Eliza Sauvage*, with a paler yellow, and a flower three times the size, was the next best yellow; and *Pactole*, a still paler yellow, the third best, but neither of these are of such rich yellow as the Persian Briar, of which there were only cut flowers, as no one can depend on it in a pot. The best white Roses were *Niphetos* (Tea), *Lamarck* (Noisette), and *Madam Legras* (Summer Rose), and *Madam Plautier*, which, however, was not worth looking at among so many good ones, being all but gone. *Miss Glegg*, a dwarf Noisette, which I do not recollect seeing in a pot before, was very fine, as showing what a good bedding Rose it is, for which I often recommended it—as many as forty Roses in one bunch or head, and only three, four, or five of them open at the same time—the best character for a bedding Rose. A bed of it, with a border of *Aimée Vibert* round it, would be the best white of the whole family. The largest Roses were, *Paul Perras*, *La Reine*, *Barron Prevost*, *Chenedole*, *Mailmaison Rose*, and *Magna Rosea*, a blush hybrid China. The most conspicuous Roses at a little distance were, *Chenedole*, *Great Western*, *Eliza Mercœur*, a hybrid Bourbon; *Duchess of Sutherland*, *Celine*, a lilacy rose; *Colonel Coombes*, dark purple; and *Juno*, a hybrid China, a fine blush Rose in the way of the flower of *Blairii*, and the two very best Roses were certainly *Coupe de Hebe* and *Blairii*, No. 2. Among the cut Roses were the *Cloth of Gold*, *Sofrano*, not often seen, and two new curious Roses, one a blush, with the edges frilled or plaited, as if done by the laundrymaid; the other a crimson, mottled all over with dark spots and streaks, named, to the memory of the late Queen of the Belgians, *Souvenir de la Reine des Belges*, which will, no doubt, be translated here, Queen of the Belgians, as the *Souvenir de la Mailmaison* is now, by universal consent, called the *Mailmaison Rose*.

I would here hint to the council of the Society, that their alteration of the tent in which the Roses and large Geraniums were exhibited is very much against the Roses, in particular. There is a glass top, or ridge, to this tent, letting down perpendicular light. This light is then shadowed by the dark roof of the tent, with a cross light entering behind the spectator. One of the large gold medals could not bring out a better method to destroy any shade, from deep rose to clear white, and even the scarlet colour of *Chenedole* was subdued to a pale pink by the fan light from above. A young lady would not sit, in company, under a light from a low ceiling for all the world, because all the world would believe she was going to faint the moment they saw her.

GERANIUMS.—The Fancies were arranged in a different tent from where the great Pelargoniums were shown—a most judicious arrangement; for when the two classes are placed in the same tent no one looks at the old ones; and even the Fancies do not seem so very pretty as they really are when the two sets are seen at once. *Magnet* was the best that was there of the fiery crimson east, and *Prince of Orange* the very best of the orange-scarlet class; and this class is the most telling after all, and by far the rarest in good varieties. If we could but get these beautiful flowers out of the grasp of the mad florists, and hand them over to a committee of ladies for selection and crossing, they would

soon bring back the lost reputation of "our geraniums" in three or four years. Nothing else but the pedantry of calling them Pe-lar-go-o-o-niums, and the stupidity of removing them into rings and full moons, have caused them to be so little thought of for the last twelve years. Those best marked in different shades of crimson, with black on the back petals, are the following:—*Magnet*, *Lord Gough*, *Alderman*, *Princess Royal* (fine), *Alonzo*, *Governor*, *Commander*, with *Ajax*, the lightest of that breed. Whites are extremely scarce, and we had but one of a sort of them here—one plant of *Pearl*, one of *Mont Blanc*, one of *Virgin Queen*, one of *Exactum*, a half-white, and one of *Village Maid*, another only half white. In orange-scarlets, there were only two kinds, *Prince of Orange* and *Incomparable*. The following were the most distinct in colours, and we could tell them off at a distance, like swans among so many geese:—*Gulielma*, *Purpurea*, *Gertrude*, *Conspicuum*, *Loveliness*, *Rosamond*, and *Ganymede*. If the above were all taken away, the rest, if they counted a thousand, would all look like one kind, to a common observer, five yards off. The plants, however, were lower, and much better grown and trained than I ever saw them before; and there could be no objection to what sticks were obliged to be used for the safety of the plants, in carriage, if not in showing off the flowers to the best advantage.

CUT FLOWERS.—I have set my face entirely against reporting on cut flowers, unless it is something very new or particular indeed, as it is only encouraging laziness to take any notice of them. *Roses*, *Azaleas*, and *Rhododendrons*, were in the cut flowers, but, of course, the plants which produced them were not fit to be seen. Last year, there were three or four little sprigs of a new plant, at one of the shows, from Mr. Veitch, but I had well nigh forgotten that, until I was applied to the other day by our biographer, to add my mite to his account of the Yellow *Leptosiphon*, figured at page 73 of our present volume. There were some half-dozen of pots full of it at this show, and they were the best of all the new plants. This annual will make a most beautiful bright yellow bed in May, by sowing the seeds in the autumn, as all the annuals from California ought to be treated. I think I have said already that *Leptosiphons* would flourish on the top of an old rotten dung heap, in the corner of a ploughed field, better than in my lady's flower garden, unless the bed was filled with one-half rotten cow dung, the other half of rotten leaf mould, and with half-an-inch of maiden loam on the top to deceive people, and keep the bottom of the plants from rotting off. At least, my first bed of this new *Leptosiphon* will be so treated, and the plants put into it at the end of February from the seed bed.

The next newest plant is an *Ixora*, a fine thing in the way of *Ixora javanica*, but with larger flowers and leaves. Mr. Low, the Colonial Secretary at Labuan, sent home a very similar *Ixora* to the Clapton Nursery, from Borneo, along with four other kinds of *Ixora*, which are still to "come out." There was also a large *Hieracleum*-looking plant, called *Gulper*—a Persian drug, and used in all Indian pickles to give them their peculiar flavour, as the ticket on the plant told us. Along with them, and all from Mr. Veitch, of the Exotic Nursery, in the King's Road, was a welcome addition to our hardy, dwarf, evergreen shrubs—a native of Patagonia, called *Philesia buxifolia*; it withstood the last six winters, at Exeter, without any harm; it will make a low, dense bush, and looks as if it ought to be in the front of a peat-bed or border of very choice things, and is increased by cuttings of the young wood; the flowers are large, of a deep rose colour, and hang down, looking very much like one of the Ghent *Alströmerias* half open. This genus was named by Commer-son, and a small natural order is founded on it by

Enlicher—*Philesiads*—*Lapageria* being the only other genus yet known in the order; but, looking at the only two plants known to us—this *Philesia buxifolia*, and *Lapageria rosea*—it is very difficult to believe that they can be clearly allied; the *Philesia* looking like some hard-leaved *Andromeda* of the *polyfolia* section, and *Lapageria*, like a twining *Bomarea*. There was a ent branch in bloom, in a pot, of the hoary-looking *Eucalyptus coccifera*, from Australia. There was also a curious Arum-like plant, I think from Mr. Rollison, of Tooting; the foot-stalks of the leaf is nearly a yard long, and streaked like some venomous snake, with a curious palmated leaf on the top, spreading crossways from the stalk, like the horn of an Elk; a marshy plant, from the East, requiring a stove; the name given is *Stanromatum punctatum*; but Scholt, the author of it, changed this name to *Typhonium*. *Dictyanthus pavonia* was likewise new to me; it is a twiner, with the growth of the true *Jalap* plant, and a curious, dull flower like that of a *Stapelia*, in shape, but not fleshy. There were three *Jacaranda*-looking plants not in flower, and a fine-looking *Protea*, called *Rhopala corcoradensis*, probably from the Corcorado Mountain, on the west of Rio, where the town is supplied with water; but Gardener makes no mention of it, unless he mistook it for a *Bignoniad*, like which it looks very much, when not in flower; the young wood and young leaves are covered with a purple down, like that on the stag-horn *Sumach*, and the growth that of *Spathodea*—a very beautiful-looking tree, but not in flower. Some day, soon, I shall name a few of the finest plants in Brazil, not yet introduced, and some of them are on the Corcorado Mountain, which has just put me in mind of them.

FANCY GERANIUMS.—They were never more beautiful, or better placed for effect. *Statuiskii* is the only one of the ugly black ones they used to show with them, but there was a new one of that class, really a good black one at last, called *Defiance*; it is "black and all black," with a light eye. The section of them, like the *Hero of Surrey*, is now very rich; these are all black, or brown and white, and here is a list of them:—*Punch*, *Richard Cobden*, *Brunette*, *Advancer* (fine), *Lady Cooper* (good), *Gaiety*, *Mignon*, *Magnum Bonum*, *Caliban*, and *Gipsy Queen*, altogether a rich group, and well-defined sorts. Those with crimson and scarlet mixed all round the petals, with a white or lilac eye, are yet very scarce—*Triumphans* (Ambrose) being the only good specimen I saw; but seedlings are coming round to this high colour, *Lady Hume Campbell*, for instance. The best white is *Delicatum*, with a bright scarlet spot in each of the back petals, and *Empress*, with a little more scarlet. Very gay ones—*Erubescens*, white and scarlet; *Modesta*, ditto; and *Nourmahal*, ditto. The faintish red ones, like *Anais*, are going out, *Rosali* and *Anais* being the only two of that strain, while *Reine des Francais* admits *Alboni*, *Princess Alice*, and *Floribunda*, on equal terms. Altogether, I wish every one of our readers were there to see them for themselves.

A full collection of Spanish and English IRISES, from Mr. Salter, of Hammersmith, was a novelty, and no less so a large collection of SMALL ROSES, in smaller pots; these were budded last summer, or autumn, on the Manetti stock, and this was the first start and bloom. Paul's *Queen Victoria*, the only white hybrid perpetual we have, was among these, and very fine it was. Next to them were six very good herbaceous CALCEOLARIAS, exceedingly well grown and trained by Mr. Constance, gardener to C. Mills, Esq., Hillingdon, Middlesex; both strangers to me, but I name them more pointedly in order to remark, that if they and other private amateurs were to take up Calceolarias afresh, and not trouble their heads about the mathematical form of the flowers, we might still expect such fine Calceolarias as have been lost during the last fifteen years. In 1837-8, and 1839, I

cried out lustily against the game then carried on with this pretty flower, and all my prophecies have come to pass respecting them, and

Now some one must raise a warning voice against *Pansies in Pots*. There were dozens of them at this Show, capitally grown; nothing could be better, but, with the exception of three or four sorts, they were not worth notice. Nothing, except the Belgian Daisies, last May twelvemonth, did ever I see so trumpery brought to an Exhibition before. My next-door neighbour made out a bed of them this spring from self-sown plants in the shrubbery, and none of his plants are nearly so bad as some at this exhibition.

There were not a great many STOVE PLANTS, only a few *Francisceas*, *Ixoras*, *Clerodendrons*, *Alamandas*, *Stephanotis*, *Vincas*, *Hoya Bella*, *Rondeletia*, and a few more of that stamp. But *Heaths* were plentiful, with other greenhouse plants, such as I named from the May show, with a good sprinkling of Chinese *Azaleas*, of which *Coronata* comes the nearest to *Mirabilis*, which I take to be the best of the race in colour, and *Exquisita* is certainly the best marked one. There were two promising seedling *Azaleas* here, *Striata formosissima*, and *Gladstonesii formosa*, in the *Picotée* style, white ground dotted with red, but the red is dull and powerless. None of the orange or copper-coloured ones ought to be crossed with whites—they never give a clear, clean stripe, or dot. There was a very fine *Statice* of the *Arborea* kind, called *Halfordii*, and there were three boxes of the *Aquilegia glandulosa*, from Mr. Grigor, all the way from Forres, I supposed; but the long journey made them look very sad.

Last of all came the ORCHIDS, and they were grand indeed; they, the *Roses*, and *Fancy Geraniums*, took the lead, but the *Roses*, being at the Park on the previous Wednesday, were sadly knocked about, while the *Orchids* seem to thrive in gadding about from place to place. I see no use whatever in bringing such plants to the show as cannot be seen except through dull glass; if there were white mice under these bell-glasses, we might have a chance of an occasional peep when they moved about, but, as it is, you must guess that there is something under them too good to be seen at a show. There was a fine, large, new *Cattleya*, from Santa Martha, of the *Mossiae* section, bluish-white, with a fringed crimson lip; and the new *Lælia*, called *Purpurata*, which some took to be a *Cattleya* last year, has much improved, and was now fine indeed. The little *Cattleya Acklandii* was in two collections. I have not seen it these five or six years, and it seems difficult to manage, for the plants are very small now; the sepals are dull green, barred with brown, and the lip an exquisite purple—quite a little gem in its way. *Acineta Humboldtii*, with ten or twelve long spikes of flowers hanging down. A new species of *Humileya*, with one flower only, not so large as *Violacea*, but in that way, and of a more decided colour. *Cypripedium humile*, from North America, I never saw so well-bloomed before; it is not very gay in colour, but belongs to a very interesting group which few gardeners can manage well. There was a move worth imitating at home with *Lælia cinnabarina*—six flowering shoots made into three, by tying two and two together, the top flower of the second shoot reaching the bottom flower of the other, so that the three looked double the length of flowering *Sobralias*, with five, six, and fifteen flowers fully expanded. The old *Calanthe veratrifolium*, with twenty flower spikes. *Aërides odoratum*, with twenty-one spikes! and one of *A. affinis*, with twenty-two. *A. roseum*, ten spikes. *Saccolabium guttatum*, with nine spikes. *Burlingtonia venusta*, not often seen, and not much when seen; small white flowers. *Dendrobium secundum*, not often seen either, but very pretty. *Vanda Batemanii*, with five open flowers on a long spike, that

will be in prime at the July Show. *Anguloa Clowesii*, with three large yellow flowers, and *Vanda Teres*, are the principals of those I did not name last May, and the rest must stand over for another week. D. BEATON.

ORNAMENTING ECONOMICALLY A NEGLECTED GREENHOUSE.

(Continued from page 165.)

IN gazing upon new plants, we cannot help being struck with their beauty, all the more radiant to many minds because novel and exotic. When, however, the thirst for the merely novel leads to the neglecting of the really beautiful, merely because it is old-fashioned and common, we think there is as clear an indication of a morbid and diseased taste, as there is evidence of a low tone in morals and right-hearted feeling, when individuals neglect the tried friends of their early days, to give their attention to the butterfly flatterers and the self-interested protestations of the passing hour. Delightful though it be to trace the beauties of a striking novelty in flowers, in vain do we look for the associations of many of our older favourites, which seldom beam upon us, even from the cottage windows, without unfolding a panoramic view of persons and circumstances linked and identified with the more prominent points of our individual histories.

When last treating of this neglected greenhouse, the remarks were chiefly confined to the treatment of plants in possession, and the raising of other desirables from seed. To-day, I will chiefly confine myself to *showy plants that can easily be raised from cuttings*, and which, in general, can easily be obtained, if not already in possession. I am the more inclined to this, as, from the tenor of several correspondent's letters, an additional interest is evidently felt for those plants which the proprietors have raised and cultivated for themselves. To save repetition, I may here remark, that everything mentioned as being raised under a handlight, or in a hotbed, will also be successfully propagated under a bell-glass in the greenhouse, but that, in the generality of the cases, either more care will be necessary to keep up a moist atmosphere, or more time must elapse before the cutting takes the place of a plant.

TEA, CHINA, AND FAIRY ROSES.—Who would find fault with some nice little flowering-plants of any of these from November to June? An average temperature of 45° at night, with a rise of from 10° to 15° during sunshine, would keep a great many of these in bloom in winter and spring. If this should appear moderately early in June, as the season is late, there will be plenty of time for propagating a stock. The first thing to do, is to make up a little bed of light sandy soil over a foot of warm dung, if it is to be had, and over clinkers and rubbish, if the dung is not to be had, and have the bed large enough to receive from one to several handlights. In fact, prepare it as you would do for *Pink* cuttings. Then examine the *Rose* plants, and you will generally have no difficulty in finding young shoots, either without flower-buds, or too thick to give them room for expansion; select those from two to four inches in length; cut them, with a sharp knife, close off to the stem whence they proceed; and, after rubbing-off a few scaly matters at their base, insert them firmly, one inch apart, in the sandy soil; water them well, cover with the glass, shade from sunshine, sprinkle the foliage when necessary, and pot singly when fairly growing. For want of a handlight, use a bell-glass over a pot, and set it during the day in a shady part of the greenhouse. These, in small pots, will yield you some nice flowers the following season.

DOUBLE WALLFLOWERS.—These should be propagated

in a similar manner. To bloom well next spring, the cuttings should have been inserted in March or April. At that time, after standing a week rather cool, they soon strike when placed in a briskish bottom-heat. Even those propagated now, if grown on, will yield a few flowers in small pots next spring; and these, pruned back, potted afresh in summer, will furnish a splendid display in the greenhouse, without any forcing, after Christmas. At that season, few things could be more beautiful than a large plant. There are many varieties, but all beautiful. I may add, that I can do little with these Wallflowers out-of-doors, unless they are kept as carefully as Geraniums in winter. In winter and spring they make fine ornaments for the greenhouse. For them, and the Roses, a rich sandy loam will answer admirably.

PERPETUAL CARNATIONS.—I lately gave an outline of the management of these. If you have got any small plants in pots, turn them out, and treat them as I have advised, until you find a better method. I do not know a better at present, as the success has been strikingly ample. It is too late to strike or borrow cuttings now to obtain plants that will bloom well in the following winter and spring; but still, a few cuttings will be valuable, even if you should stay to the end of the autumn of 1854 to be rewarded for your labours. I would advise inserting them immediately in a pot, in pure sand, over sandy loam, well drained; and when well watered, and the foliage dry, place a bell-glass over them, and place the pot in the warmest part of the greenhouse, or in a slight hotbed, shading it from bright sunshine, but giving all the light the plants will endure; and giving a little air at night, by raising one side of the bell-glass a little. I disapprove of shortening the tops of the foliage. I may, also, mention a very quick and successful mode for making the cuttings, and which is applicable to the whole Carnation and Pink tribe. There is little question, that if we do not wish to be run down, we must steam away with the age. I look back, with something like regret to the old mode of making such cuttings, technically called *pipings*, in the olden time; everything spoke so much of comfort and ease. First, the gardener walks round and cuts off a bundle of shoots; then he sets him down comfortably in a shed, with his bundle before him; he takes up one shoot, or cutting, and strips off a number of leaves from the lower part, until he gets high enough, or near enough to the point, to find that the stem is getting somewhat soft; he there cuts through at a joint, with a knife that could not be made sharper: but that is not all; to make assurance doubly sure, he inserts his knife, at the middle of the horizontal cut, and by cutting upwards for from a quarter to half-an-inch, thus divides the base of his cutting in two—the object of which, no doubt, is the exposure of more soft, alburnum matter, so as to facilitate the protrusion of roots. Then, previously having procured a pan of damp sand, each cutting, as thus made, is inserted in the sand until there is a sufficiency accumulated to warrant the propriety of the operator getting off his perch, and sticking or dibbling his cuttings under hand-lights, or bell-glasses. Now this very mode was carried out fully in not a few large establishments last season. I prefer the following, because it secures the necessary neither-hard-nor-soft condition to the base of the cutting; it does not interfere much with the appearance of the parent plant, and because the time employed is reduced to a minimum. Take hold of the base of the shoot with the fingers and thumb of the left hand, so as to steady it there, and with similar instruments of the right hand, catch the point of the shoot about the second joint downwards, give a gentle but sudden pull, and out comes the cutting from the joint, cleaner and more perfect than any cutting of a knife could make it, and ready to be at once

inserted in the propagating pot. In a few cases, a slight film may adhere to one side at the base, and that is all the knife will be useful for. This seeming digression will not be lost, as the general propagating period for all these things is now at hand.

But to return to our Carnations for ornamenting the greenhouse, and that are to be inserted as cuttings now—the following is the outline of treatment:—Pot off singly, as soon as struck; if they are growing strongly by the end of autumn, stop them by removing the terminal bud, which is best done by catching two or three of the small leaves at the point, and pulling them to you, which will bring the terminal point along with them. If not very strong, delay the stopping until March; pot in light sandy loam; keep them in a cold pit, or a cool place of the greenhouse, in winter; by April, small side-shoots will begin to show themselves. During that month, or the first days in May, transfer them to a well-dug border, enriched with decayed dung and some road-drift. Aspect—east, west, or south. Give them water as they require it. If there should be only one or two shoots, remove the central bud, and you will soon have several. See that the plants do not get broken down during the summer. Towards the end of August lift them carefully with balls, and pot them into rich open soil; shade for a few days, and from the end of October until April, or even as long as you like to keep them, you will have one of the finest ornaments, either for the window or the greenhouse. I am inclined to believe that the *Anne Boleyn* Pink might be treated in the same way, and bloom far better in winter and spring than when forced.

HYDRANGEA HORTENSIS.—This is quite hardy enough to stand uninjured, out-of-doors, in the southern parts of the island; and though the top parts, farther north, are often destroyed by the frost, it will often send up flowers from its lower buds, just as in such cases is done from a *Fuchsia* stool. Where plenty of light can be obtained to mature these lower buds in summer, a protection of moss, thrown over the bottom of the plant in winter, would save the plant sufficiently to bloom out-of-doors in summer. As a denizen of the greenhouse, however, we have to do with it here, and there it is not only always attractive, whether as a small plant with one flower, or a large one with many flowers, but a well-grown specimen always testifies to a considerable amount of pains-taking effort. It is easily propagated, either by the older shoots, or those merely two or three inches in length, which it is often necessary to thin out: the latter strike very quickly in a slight hotbed. With nothing but a greenhouse, you will not have much of flowering-plants next season, unless you can grow them extra well. You are quite as likely to have a flower this autumn, or two months hence, if the young shoot you have selected proceeds from a well-ripened bud. Your flowers, next season, depend upon the maturing of your young shoot or shoots this autumn. The having your plants struck any time this summer and autumn, and keeping the plants in a cold pit, or in a cool, shady place during winter, in the greenhouse, will give you an advantage over spring-propagated plants.

I shall describe the treatment necessary for a young plant next season, and that will also shew what is wanted for the present. Nothing is so grateful for the aid of a hotbed, either when striking, or when you are starting the plant into fresh growth in the spring. Sandy loam and decayed cow-dung will grow the plant well. A seven-inch pot will grow a nice plant with from one to three large heads of bloom. For a large plant, a twelve or sixteen-inch pot will be necessary. With nothing but the greenhouse, growth will be less rapid, and you must delay operations until the sun has gained strength in March and April. Then, as your small plant pricks up

its ears and grows vigorously, give it a shift into a larger pot, as it requires it, and according to the size you wish it to attain. If to be large, you will require to stop it in April, that you may double or treble your number of shoots. As, when growing, it is a regular drinker, you may humour it by setting the pot in a saucer seldom destitute of water. By the middle of June, unless the plant stands in a roomy, open, light greenhouse, you may plunge your pot in the open garden, shading the plant for a few days at first, mulching it with well-decayed dung, supplying with plenty of water, and twisting the pot round, once a week or so, to prevent the plant freely rooting through. By the end of August, water should be gradually withheld, so as to assist the hardening of the shoots and the ripening of the buds. By the end of September, the less rain that falls on the plant the better. By the end of October, house in a cold pit, or beneath the stage in a cool greenhouse. Where there is a hotbed, or a hothouse, the plant may be excited into growth any time after Christmas; of course, with a greenhouse alone, you must wait until the sun gains strength. A key-note to the culture, will, at once, be apparent, if it is recollected, that it should be pruned, thinned, and grown similar to a *Vine*; the flowers on the points of the shoots this season, coming from well-ripened buds, formed on the shoots of the preceding year, a fact which generally renders the best appearances in pots to be produced from plants comparatively young. When growing and blooming, they dearly relish almost everything in the shape of manure-water. Growing rapidly, maturing thoroughly, and resting quietly, are the secrets for obtaining immense heads of bloom, in the future, from a little excitement and nourishment.

A friend lately complained that he had some young plants from a blue flowering kind, and he thought he was done for, because his plants all came pink. Nothing of the kind. The colour of this plant cannot be propagated. It depends on circumstances, such as soil, &c. I have failed, with all my scheming, at one time, to get a pink flower. I have equally failed at others to get a blue one. Frequently, I have had several shades of both on the same plant. Iron filings, mixed with the soil, and watering with a weak solution of alum, will frequently yield a beautiful blue, but not always. The loams of Hampstead Heath, and Wimbledon Common, generally produce this result, as do several peat earths found near Edinburgh, Berlin, and St. Petersburg. An oxide of iron, or the presence of alum, is generally supposed to be the cause; but I think there is great uncertainty in working out, at all times, such a result. I have not, however, experimented for some years, and shall be glad to know if recent experiments have been more decided in their result.

R. FISH.

(To be continued.)

HORTICULTURAL EXHIBITION IN THE REGENT'S PARK.

THE Royal Botanic Society held their second meeting for this year on Wednesday, the 8th of June. A finer day could not possibly be. The grounds were in beautiful order: the Lilacs, Laburnums, Snowball-trees, and numerous other shrubs that in this month more especially adorn our pleasure-grounds everywhere were in full flower, and as fresh and sweet as possible. Standing upon the mount in the grounds, and looking down upon the beautifully laid-out garden, filled with flowers, and a numerous company dressed in all the richest colours, the scene was truly animating and joyous.

The subjects exhibited were, upon the whole, very satisfactory; but as many of them were shewn at the previous meeting, my notices will necessarily be brief. Our readers must imagine them present besides those that I shall present to their notice. One exception there was, and one of some extent—Mrs. Lawrence, of Ealing Park, did not send her large collection of her well-known fine, large, stove and greenhouse plants. Various rumours were afloat as to the reason, but the most probable one was the approach of the Chiswick Show, which took place the following Saturday. Be that as it may, the rest of the contributors sent plants sufficient, and in good order, to fill up the vacant space.

NEW AND RARE PLANTS.—*Dipladenia crassiuoda*, var. *superba*.—This is a decided improvement upon the old species, fine though it be. The flowers are fully two inches more in diameter, and the colour much richer and deeper, and the foliage, too, is larger. It stood, when I saw it, close beside a well-grown plant of the original species, and the difference was striking and remarkable even to the most superficial observer.

Messrs. Veitch sent a new *Saccolabium* with a broad, deep, purple lip. The whole flower was larger than any other *Saccolabium* I know. I suspect, however, it is nearly allied to *S. Blumei major*.

There was, also, a new and beautiful *Huntleya*, sent by Mr. Carson, gardener to W. Farmer, Esq., of Non-such Park, Cheam. The sepals and petals were not particularly showy; but the lip was of the richest dark purple, large, and handsome. Decidedly an acquisition, even to the beautiful tribe it belongs to.

From Mr. Woolley, gardener to H. B. Kerr, Esq., of Cheshunt, there was a new *Dendrobium* of considerable beauty; the whole flower was of a bright orange colour. The plant had been imported lately, and had only one spike of flowers upon it, but when better cultivated, and more fully bloomed, it will be very desirable. I propose naming it *Dendrobium aurantium concolor*.

Sarcochilus calceolus came from the same place, an orchid, with cream-coloured flowers, rather small, but produced numerously from the axils of the leaves.

That noble plant, the *Lilium giganteum*, was shown in flower, by Messrs. Veitch. The leaves were a foot long, and nine inches broad; the stem was very stout, nearly as thick at the base as a man's wrist, rising to the height of six feet, crowned with eight large tubular flowers of a white colour, spotted on the inside edges with crimson. This was truly a noble plant, and the most remarkable one in the whole exhibition. Whether it had any perfume, I had no opportunity of ascertaining, because the blooms were six feet high from the pot, elevated upon a stage three feet high.

Mr. Woolley sent a well-bloomed pot-full of *Cypripedium humile*, a hardy orchid, from North America, with seven flowers. This is a rarely-seen plant, and never seen in finer condition.

New varieties of *Florists' Flowers* were not numerous. The most remarkable was an *Azalea*, named *Striata formosissima*, a great improvement upon the striped varieties. It had clear, bright red stripes, upon a white ground, very much more distinct than *Azalea vittata*. The foliage is small, and the plant of a dense bushy habit.

Mr. Hoyle, of Reading, had a stand of new PELARGONIUMS of superior merit. One, named *Regalia*, obtained a prize, as the nearest approach to scarlet in this class. It stood near to *Maguet*, the star of last year, and is superior to it in colour, as a scarlet and a bell-form. *Chino* is a rosy-purple; upper petals dark maroon, edged with earmine; form excellent. *Governor General*, an improvement upon *Governor*, in form and colour; rose lower petals, and purple upper petals; a free bloomer. *Nonpareil*, very much like the *Zaria* of last year. *Majestic*, a dark rose with white eye. These

are decided improvements, and worthy of cultivation. Messrs. Henderson, of Pine-apple Place, sent a Pelargonium called *Countess*, a free-flowering, light variety, suited for bedding purposes, that is, if it will bear exposure in the open air. There was also a new striped variety, from Mr. Macintosh, of Maida Vale, which promises well. It had a truss of flowers upon it of a bright scarlet. The plant has all the habit of the scarlet *Tom Thumb*, being dwarf, compact, and bushy. Messrs. Henderson had a specimen of their white, horse-shoe-leaved Geranium, called *Boule de Neige*, a desirable bedding variety.

In new STOVE PLANTS, the most remarkable one was *Plectranthus concolor picta*. The leaves are its chief attraction, being of a dark crimson colour edged with green. The lovers of coloured leaves will be delighted with this plant.

There was also a plant named *Phrynium splendidum*, belonging to the ginger tribe, with a fine head of bright crimson flowers, with a white centre.

THE ORCHIDS were more numerous than at the last meeting; they filled one side of one of the long tents completely, and they were not only more numerous, but even better bloomed. The following were additions to those I noted on the last occasion:—*Burlingtonia venusta*, twelve spikes. *B. fragrans*, four spikes. *Aërides affine*, twenty spikes, many of them much branched; a most splendid plant. *A. affine rosea*, ten spikes; very beautiful. *A. odorata purpurescens*, twenty spikes; very well grown and profusely flowered. *Dendrobium secundum*, the dark variety; I never saw this so well bloomed or better coloured; fourteen spikes. *D. transparens*, numerous spikes; a lovely, small flowered species. *D. clavatum* (new); the flowers of this species are like *D. Paxtonii*, but have no fringe to the lip, and the plant is of a more dwarf habit. *D. Devonianum*; I mentioned this as being at the previous Show, but on this occasion it was grown as it should be, in a basket, with the flower-shoots drooping downward; the plant was large, and had numerous spikes clothed with their beautiful flowers. *D. tortile*, though not showy in colour, this is a delicately beautiful species, producing its pretty flowers very abundantly. *Anguloa Clowesii*, with three large, golden-coloured flowers. *Anguloa Humboldtii*, a large plant, with long, drooping spikes. *Cattleya Mossiae*, the orange-tipped variety, twenty flowers. *Lycaste tyrianthina*, well bloomed. *Calanthe masuca*, ten spikes. *Vanda Roxburghii cærulea*, two spikes, with many flowers. *V. teres*, six flowers; *Sobralia macrantha*, with sixteen flowers, very highly coloured. These were the most remarkable plants, in addition to a display of other kinds of *Aërides*, *Dendrobiums*, and *Phalænopsis*, making altogether one of the most splendid exhibitions of orchids ever seen.

In MISCELLANEOUS COLLECTIONS of stove and greenhouse plants there was no lack of fine, well-bloomed specimens—stove plants preponderating more, as might be expected, than at the last show. There certainly were not so many very large plants, because the collection from Ealing Park was not there; but I question much whether such immense plants are so attractive as smaller ones profusely bloomed. The following are additional:—

Hoya bella, syn. *Paxtonii*, a good, well-bloomed plant, 3 ft. by 3 ft.; *Allamanda cathartica*, 4 ft. by 4 ft.; *Chorozema grandiflora*, 3 ft. by 3 ft.; *Clerodendron splendens*, trained to a globular trellis, and profusely bloomed, 3 ft. by 3 ft.; *Rondeletia speciosa*, very shapely and profusely bloomed, 3 ft. by 3 ft.; *Dipladenia splendens*, a large plant, well-flowered, 5 ft. by 4 ft.; *Boronia serrulata*, a favourite plant, 2½ ft. by 2 ft.; *Tetralthea verticillata*, 2 ft. by 2 ft.; *Aotus gracillimus*, very elegant and profusely bloomed, 3 ft. by 3 ft.; *Chorozema macrophylla*, trained as a twiner, 3 ft. by 2½ ft.; *Hibbertia*

Cunninghamii, a bright yellow-flowered species, 2 ft. by 2 ft.; *Cyrtanthera magnifica*, rather new, allied to *Justicia*, with large spikes of reddish flowers, 2 ft. by 2 ft.; *Burchellia capensis*, 3 ft. by 3 ft., well bloomed; *Polygala Dalmaisiana*, 2½ ft. by 2½ ft.; and *P. grandiflora*, 3 ft. by 2½ ft.

HEATHS were exhibited in great numbers, and exceedingly well bloomed, especially *Erica splendens*, 2 ft. by 2 ft.; *E. Westphaliegii*, 2½ ft. by 2 ft.; *E. ventricosa fasciculata rosea*, 3 ft. by 3 ft.; *E. ventricosa grandiflora* (the best of all the Ventricose heaths), 3 ft. by 2½ ft.; *E. tricolor*, 3 ft. by 3 ft.; *E. odorata*, 9 ft. by 1½ ft.; *E. Massonii*, 2 ft. by 2 ft.; *E. metulæflora*, the true species, a compact bush, well bloomed, 2½ ft. by 2½ ft.

GREENHOUSE AZALEAS were exhibited in considerable numbers, but the plants were generally smaller than at the May shows. They were, however, well-bloomed Florists' Flowers.

ROSES IN POTS.—These were quite as good as in May, and there were several fresh varieties exhibited. I noted the following as being good, in addition to those mentioned on the last occasion—

White.—Lamargie, Madame Legras, Madame Plantia.

Blush Rose.—Blairi, Souvenir de Malmaison, Magna rosea (very large and double), Mandalein, Armosa.

Deep Rose.—Triomphe d'Angers, Dr. Marx, Charles Faequier, La Reine, Madame Laffay, Triomphe de Laequier.

Yellow.—This colour was more plentiful than ordinary. Pauline Plantia, La Paetole, Eliza Sauvage, and others.

Crimson.—Louis Peronny, Velours Episcopale, Augustus Mousehelet.

PELARGONIUMS.—The collections of this effective show flower were numerous, and generally finely-bloomed. There were many additions to the varieties I mentioned as being at the May meeting; the best were as below—

Dark.—Nandee, Claudiana, Jupiter, Sahib, Narcissus, Optimum (very fine), Osear, Painter—improved.

Scarlet, or approaching to it.—Mars, Renown, Incomparable, Basilisk.

Purple.—Governor, Purpurea, Tamberlik, Cruenta.

Light.—Leonora, Medora, Euehantress.

Rose.—Emily, Nonpareil, Zaria, Majestic, Elise, May Queen, Don Carlos.

The lesser, or *fancy varieties*—*Light*: Celestial, Florabunda, Nourmahal, Delicata, Formosissima, Jenny Lind. In *dark varieties*, there were no additions worth noticing, excepting one named Lady Hume Campbell.

CALCEOLARIAS.—There were several collections in fine condition; the best were *Bertha*, dark crimson, spotted with orange; *Rising Sun*, a glowing scarlet, nearly self-coloured; *Alice*, a large, round flower, yellow ground, spotted with crimson; *Miss E. Mills*, and *Delicata*.

FUCHSIA.—There was one collection of six shown in fine condition, consisting of *Light varieties*—Rosamond, Elizabeth, Dr. Grove; *Dark varieties*—Ajax (very good), Falstaff, Count Beaulieu.

MISCELLANEOUS.—Under this head, there was exhibited a fine collection of *Stove Ferns*, two collections of *British Ferns*, and a collection of *Lycopodiums*, all well grown; also, a considerable collection of *Anectochilus*, in various species, shown under bell-glasses. *Variegated hardy plants*, a collection of 45 varieties; a collection of cut wild flowers, and four collections of interesting *Alpine plants*.

FRUIT.—The Society offered prizes for fruit at this meeting, and the growers mustered strong, and produced a very fair display. There were twenty-one *Pine Apples*, five baskets of *Black Grapes*, 12 lbs. each, twenty-one dishes of *Black Grapes*, three bunches in each, and seven dishes, of three bunches each, of *White Grapes*; eight dishes of *Peaches*, six dishes of *Nectarines*,

thirteen *Melons*, four dishes of *Strawberries*, one dish of *Cherries*, one dish of *Apricots*, one large dish of *Citrons*, one of *Lemons*, and one of *Oranges*, besides several *Vines in pots*, bearing ripe fruit. The *Pines* were not quite so good as I have seen in former years. The *Black Grapes* were excellent, both in size of bunches, size of berry, and colour. The *White Grapes* were scarcely ripe, excepting one dish of *Muscats*, which were most excellent, being of that rich amber colour for which this variety is so much admired. *Peaches* and *Nectarines* perfectly ripe, and a good size. *Melons* very fine, as also the *Strawberries*.

The *American Garden* was in fine order. The scene under the tents appropriated to it was truly grand. Nearly every bush, whether a noble standard, ten feet diameter, or a tiny plant, not a foot high, was covered with blooms of various hues, from nearly black to pure white. I took notes of the best varieties, and shall write them out shortly for the benefit of our readers who are desirous of growing these fine hardy shrubs. At present, the space allotted to me is full.

T. APPLEBY.

MELONS, AND THEIR CULTURE.

NOTWITHSTANDING the many improvements the last few years have effected in the heating apparatuses by which our forced fruits, flowers, and vegetables have benefited, it is strange that the old-fashioned mode adopted by our grandfathers produce as good fruit as the most approved heating contrivance of the present day, aided by all the other advantages which science has been able to suggest. That this stand-still state of things is the result of any lack of energy on the part of the cultivator, we do not assume; the reason is, that a tender annual plant, like the *Melon*, is more the creature of the season than of the cultivator; and we have the best authority for supposing them not to have improved much during the last century or more. Our most enterprising growers will, now and then, produce fruit of extraordinary excellence—and, more than this, furnish one at a much earlier period than of yore; yet we question whether they exceed the flavour of the small old Egyptian Green-fleshed *Melon*, which, we are told, was in existence long before the present century. Now, though this was, perhaps, never produced so early as some kinds have been of late, still, with the means then in existence, we must admit that *Melon* growing, as a branch of the great horticultural tree, has made but little growth, neither is it likely that it will advance so rapidly as has done that of the *Pine-apple* and the *Grape*; for, as we have said, it is more the creature of the seasons than anything else, and if any proof were wanting to show that the seasons were quite as favourable an hundred years since as now, just ask the old people accustomed to rural life, and they will tell you that, in accordance with the old Calendar, wheat was expected to be in the ear by the last day in May (now the 11th of June); and, except, perhaps, in very favoured districts, I might ask, How often is it seen before that time? But seldom, we opine, and very often not until some three or four days after.

Having dwelt enough on that point, let us consider next what can be done to render the *Melon* as useful a fruit as can be obtained under any circumstances. Now, as ripe *Melons* will, in most gardens, have been pretty plentiful for some time, we will omit any detail of the process to be adopted in winter and early spring, in order to secure this fruit at the earliest possible day, and will proceed with the usual routine work of the season, so far as it relates to the keeping of the plants in good health, without which it is useless to think of a successful issue to your endeavours.

This good health is more the result of a careful attention to small matters than to any particular one; and it is also to be observed that disease and insects are quite as often the effect of an omission of duty as the commission of any great fault. For instance, we will suppose the *Melon* inhabiting an ordinary frame or compartment in a pit, where the volume of air it has to live upon is comparatively small; in such a position, it is reasonable to suppose that its welfare must depend very much on the keeping of that air as pure and of as proper a temperature as possible. Now the reverse to this is the case when, by accident, "air is forgotten to be admitted," for but a few minutes later than the proper time, the too-much-increased heat is a trial which it often proves unable to endure; and though the prudent cultivator will, under such circumstances, not suddenly expose the plants to that open exposure which others might do, in the folly of running from one extreme to the other, but will most likely give such admission to fresh air as will gradually cool it down to the proper standard, and, at the same time, apply some shading, to prevent the sun acting on leaves so highly excited as these have been; yet the result often is, that next day the plants are unable to stand against sunshine, and shading is again had recourse to, and probably, in about a week, it is discovered that "*Red Spider*" has made its appearance amongst them, notwithstanding the precaution of putting them "wet to bed," as gardeners would say, has been fully carried out.

This is no fanciful picture; it has occurred over and over again. The limited space for air, in an ordinary *Melon* pit, renders it peculiarly liable to heat quickly by the sun, especially as such structures are generally as air-tight as possible; hence the excited state the plant must be in when subjected to something like, perhaps, a temperature of about 110°, which an air-tight frame will speedily heat to; and, as we have said, its pores are so numerous, and of so delicate a nature, that their being filled in one minute by hot air, and the next exposed to the ordinary breeze of the atmosphere, is too sudden a change for them to endure. A careful attendance, therefore, will be necessary in the matter of giving air, and the same in taking it away; for an undue admission of it, or rather cold currents, at a time when the atmosphere is chilly and uncongenial, is often as fatal as the reverse course; and though, by commencing when the plants are young, to inure them to a great amount of atmospheric air will enable them to withstand a greater amount of cold than if brought up in a more coddled way, still, it rarely happens that first-rate fruit is produced by that means, for the plant being a native of the hot regions of the East, where, for the greatest part of its existence, it enjoys unclouded sunshine, and a tropical temperature at night, as well as by day, we may properly class it amongst the most tender plants we have; for, though we have plants with us from the same countries the *Melon* is a native of that will endure our winter, still, be it remembered, these are perennial, and the winter of Persia, and other parts of central Asia, is not without a fair share of severity nearly equal to our own, consequently, plants having such a climate to accommodate themselves to must be possessed of a considerable share of constitutional hardihood. This, however, is different with others like the *Melon*, which only exists during a small portion of the hottest period, of which we have no parallel in England, save the rough imitation we strive at in our hothouses and hotbeds; it is, therefore, plain that the *Melon* requires a great amount of heat both atmospheric and bottom. Something like 80° will be wanted to grow this fruit to perfection, and although, on some occasions, a lower temperature will suffice, and at other times a higher one may be successful; yet something like the heat here given will be found the best that can be in the

end; in, therefore, preparing a bed for the Melon, it ought to be in reality "a hotbed," or, at least, "a warm one," for the roots ought to have the benefit of sufficient scope amongst earth warmed to the degree mentioned, and not simply for the plant to be treated to that amount of atmospheric air floating over a compost considerably under the temperate point. We must return to this subject.

W. ROBSON.

HAY-MAKING.

THE converting of grass into hay has always been attended with great risks, and considerable expense, in the climate of England (particularly that of the northern and western counties); it is, therefore, a matter of great consequence, in agricultural management, to consider how far the risk may be avoided and the expense diminished. I propose to confine my observations, upon the present occasion, to the making of hay from grass the produce of arable land, as I intend, at a future time, to make the management of pasture and meadow hay the subject for a separate paper.

The mowing of field-grass for hay should be regulated by the season and the sorts of grass or clover which are intended to be cut for hay. No particular time can be named, because, in some seasons, the grass will be a week or ten days earlier than in others.

The best stage of growth to commence cutting is when the grasses are in full bloom, or flower, as, at that period, there is the greatest deposit of saccharine and nutritious matters in the stem; it is, therefore, desirable that those sorts of grass and clover only should be grown together which will bloom and flower at the same time. For this reason, the Italian rye grass does well to grow with Red Clover, for, although it is earlier to blade than the ordinary sorts of rye grass, such as the Devon Bents, yet it is, at least, ten days later in blooming, which, in general, happens about the period the Red Clover comes into flower. From the same cause, the early sorts of rye grass do best mixed with Trefoil or Hop Clover, which is the earliest kind of clover usually grown for making into hay. I do not propose to enlarge upon this point, as I have commented upon it in a former article, under the head of sowing of Grass Seeds.

The usual method of making field hay, and one which has been in use for a great number of years, is to cut the grass, and let it remain in swarth until the top portion is well dried by the sun and wind, then to turn it over, and allow it to remain until sufficiently made, and dry to be forked, and put into heap, or pook, as it is commonly termed, in readiness for carting to the stack. This plan answers very well when the clovers are mixed with rye grass, where the crop is not very abundant, and in fine seasons, when a succession of dry weather occurs, and it entails but little expense; but, in ordinary seasons, it is so long before the hay is in order to put into stack, that it is always attended with great risk.

When hay is intended for the use of sheep stock, more particularly for early lambs and ewes, it is most

advisable to grow the clovers without any mixture of rye grass. The following wheat crop is also much better upon soils in general when sown after clover grown alone. I, therefore, propose to treat of the management of hay made from the clovers separately, having for many years, in my own practice, found that the method usually adopted in making hay of the mixed grasses is attended with too much risk, if applied to the clovers alone. If I have a crop of clover, of either variety, grown separate, I prefer to have it tedded, or scattered, over the ground, as fast as it is cut, by women or boys; otherwise, by the haymaking machine, which is certainly best, particularly upon large farms, where there is much work to be done. The following day it is raked into small windrows with the hand-rake; the third day, the windrows are turned over with the rake, and the fourth, if the weather has been dry, the hay will be in a forward state, but, perhaps, not fit to put into stack, which will, in some measure, depend upon the sort of clover. The Red Clover, being composed of strong, succulent stalks, usually requires a day or two longer exposure to the sun and wind than the finer clovers, such as the White Dutch, and Trefoil. When the hay is nearly fit for carting to the stack, instead of putting it into heaps or pooks, I prefer drawing with the handrake five or six of the windrows into one large row, and, after a few hours, take it to the stack in a hot and dry state.

I dislike the plan of pooking hay the day previous to carting to the stack; it is never in so good order as it is when run together into rows just before carting to stack.

Hay, made according to the last method I have described, will contain the greatest amount of nutriment, will be subject to the least possible loss in the field, by falling off the leaf and fine particles of the grass, and will be made in the shortest time possible, thereby diminishing the risk, or liability to damage by rain. It will require at least two days less time to make the hay in the latter than in the former method, which, in our changeable climate, is a matter of immense importance. The non-pooking is, however, the most expensive plan, which I consider amply compensated by the less loss incurred, owing to the hay being dried more regularly, and not being so long exposed to the action of the sun; the leaf, moreover, does not become so brittle and likely to fall off in carting.

The above remarks all apply to a favourable season; but I would observe, that upon the approach of rain, in the old method, if the hay is not made enough to cart to the stack, it is better to allow it to remain in the swarth, as it is much sooner dried in case of a return of fine weather. But in my own method, the grass having been more separated, upon the appearance of rain it should be put into pook as quickly as possible, and it will remain in this way a considerable time without serious damage, if the hay be half-made when put together into pook. When hay has been damaged in the field by rain, let it get quite dry before carting, and add one gallon of salt to a ton of hay strewn over the rick whilst the stacking is going on; this will very much improve the value of damaged

hay. So difficult is it to dry hay after having been exposed to wet weather, that I make it a general rule never to cart to the stack on the same day it has received rain. It is often asserted by farmers, that the hay is better for being heated in the stack, but this does not accord with the fact, for the most that can be said is, that it comes out of stack more compact, and is less wasteful.

I am of opinion, that it always loses a portion of nutrition if the stack is heated sufficient to change the colour of the hay; for the best and most nutritious hay I have ever consumed by stock has been as bright and green as when first put together.

This matter, however, may be easily decided by chemical analysis; and I hope, at an early period, to have this point settled by scientific enquiry.

In conclusion, it must be considered necessary to make the ricks of such size and shape as will be likely to secure the greatest portion of hay from damage, by excessive fermentation and exposure to the weather on the outside. Large ricks are objectionable, unless the hay is overmade, or has taken rain, in which case it is a good plan, if available, to introduce a few loads of hay only partially made into the stack. Hay can always be carted a day earlier into moderate-sized ricks, containing about fifteen tons. Small ricks of six to ten tons are best made round, as in some of the Midland districts, having less outside appertaining to them.

If circumstances occur likely to produce excess of heat in the stack, a hole, or chimney, in the centre of the stack, should be made by drawing a sack stuffed with straw up the middle whilst making: this will allow the heat to escape.

JOSEPH BLUNDELL.

POULTRY SHOWS.

BATH AND WEST OF ENGLAND POULTRY EXHIBITION.—“Plymouth weather” is proverbial, and its usual rainy character was fully maintained on the 9th, 10th, and 11th of the present month, the days on which the annual meeting of the Bath and West of England Agricultural Society took place.

It will be remembered, that at the Exhibition of this Society at Taunton, in 1852, poultry was first allowed admission; a few pens only were then brought into competition, and many members of the Society were strongly disinclined to regard them with any favourable eye. The results of the past year, however, especially the interest evidenced by the Royal Agricultural Society, encouraged those who felt that the time had now come when poultry might be fairly classed as an important item of agricultural stock. But still there were many impediments in their way, and we fully believe that had it not been for the continued zeal and activity of Jonathan Gray, Esq., who undertook not merely the management, but also the pecuniary responsibility of this portion of the Exhibition, the Plymouth Poultry Show would never have been carried out.

Mr. Gray's arrangements were admirable, and the comfort of the birds, and the convenience of the spectators, were equally consulted. Two large tents contained upwards of three hundred pens, but very few of which had the unwelcome ticket “not arrived” attached to them. These pens were of a far more substantial character than any we have before seen, and several improvements were deserving of general application. The first, for instance, was so placed in a groove as to slide upwards, and when down each was secured by a padlock, by no means, we imagine, an unnecessary precaution; the only alteration we should suggest

would be having those intended for the elder Shanghaes higher, as in several instances their combs touched the top, and any injury to that sensitive part is attended with great risk.

The list commenced with *Dorkings*, where the victories recently achieved by Captain Hornby were once more repeated, though No. 1 at Cheltenham became No. 2 at Plymouth. No. 9, belonging to Miss Wilcox, had many points of merit, but, excepting the three winners, we must not speak of this class in any higher terms than as a *fair* lot. Dorking Chickens, however, were very good, and here again success attended the Knowsley Yard.

Spanish, as might have been anticipated, appeared on the prize-list with both first and second places attached to Captain Hornby's name; those that followed, belonging to Mr. Head, came, we should imagine, from the same stock; and the commended birds of Miss Goodenough had much to recommend them. Exhibitors should fully understand the extreme importance, in the eyes of a judge, of the perfect development of the white face, the peculiar characteristic of the Spanish breed. Wherever this is stained, or imperfect in form, no other points can atone for the deficiency. Spanish chickens had no good pen.

When we came to *Shanghaes*, and found ourselves unable to speak so highly of them generally, as we did of this same class at Cheltenham, the many advantages enjoyed by the latter town, from its central position, should be duly taken into consideration. Mr. Cattell won the first prize with a pen including his large cock, a bird that, six weeks since, weighed upwards of 14 lbs.; next came Mr. Potts, with some well-shaped fowls; while the third place was held by Mr. Rawson. There were, also, several commendations, one of which distinguished a pen of Mr. H. E. Gurney, of Lombard-street, containing a cock of remarkable merit. Breeders must carefully consider colour in the selection of their stock; there are too many birds now shown of a washy, dingy, drab, far removed from the bright, clear, buff, that forms so beautiful a feature in the best strains of *Shanghae* stock. In the same way, dark hackle on a light body-colour strikes us as objectionable; violent contrasts, in short, do not become this breed, and the general tone of their feathering should certainly be uniform. *Shanghae* chickens, in the buff and cinnamon division, were deservedly praised. Besides the prize birds, Mr. Cyrus Clark and Mr. James Cattell exhibited pens of great promise. The “dark” *Shanghaes*, old and young, we can say but little of; they wanted brilliancy of feather, and were shown in poor condition; nor had due care been taken in their selection, since, in more than one instance, cinnamon cocks were shown with partridge hens.

Game was an excellent collection. Black-breasted Reds carried off the two first prizes, while the third was allotted to a pen of Duckwings—excellent specimens of feathering. The point, however, on which we should be most disposed to criticise, would be the absence of sufficient power in the leg: the shank of a Game-fowl should be both long and strong; and, in this respect, the birds that took the second prize were admirably formed. We have spoken in praise of this class generally, certain exceptions, however, must be taken where the birds evidenced manifest traces of Malay blood; while, again, in the Malay class, the same indications of an admixture of Game blood were discernable. The *Malays*, however, were bad specimens.

In speaking of *Hamburghs*, we must pronounce the Golden-pencilled to be a far better lot than the Silver; the latter, indeed, were deservedly rejected by the judges for any first prize. Any village in Lancashire, or Yorkshire, could have produced birds of infinitely higher character for eighteen-pence or two shillings apiece.

The *Polands*, both Gold and Silver, were good; not so the White-crested Blacks, on whom we think the honour of a first prize was ill-bestowed; they were faulty in many respects. By the way, since pruning in *Shanghae*'s tails had been deservedly objected to, the reduction of Polish combs strike us as equally contrary to the principles on which poultry should be placed in competition.

Hybrids were pronounced as not of sufficient merit to receive any prize; and in this judgment we most heartily concur; the propriety, indeed, of offering any prize for mongrels is, to us, questionable; but, if shown, the parent-

age on either side should certainly be distinctly mentioned in the catalogue.

The first prize Golden *Bantams* appeared to us too large; the Silver were good; the White, belonging to the Rev. Grenville F. Hodson, excellent, better specimens, indeed, we have rarely seen; while the Black can have but little said for them.

In *Ducks*, the Aylesbury family were but second-rate, their peculiar characteristic, the pale bill, being very imperfectly represented. Those to whom the first prize was awarded were certainly the best, so far, at least, as mere colour was concerned, but their bills were so disfigured by dark stains, that, in our opinion, the second prize pen should have taken precedence. The drake of this lot, it is true, had a yellowish tinge on the bill, but the ducks, one more especially, were very good, and in form, size, and plumage, immensely superior to No. 1. This seemed a general opinion, and the ticket "sold" was speedily affixed to them. Rouen Ducks, *Geese*, and *Turkeys*, were all highly creditable, excepting Muscovy Ducks, for which we have always thought the smallest possible prizes would be amply sufficient. In *Pigeons*, there were good Barbs, Runts, and Carriers; the Almond Tumblers, however, were indifferent.

We have now gone through the catalogue, and, in congratulating Mr. Gray on the success of his undertaking, we will venture to express our hope, that another year the Spangled Hamburgs and White Shanghaes may appear on the prize list. The results of the Plymouth Poultry Show having been so satisfactory, for the numbers who were admitted on each day must have given a large amount of receipts, we shall look forward to the next meeting at Bath, under the same able management, as likely to bring together many of the best birds in England. The Judges on this occasion were E. Bond, Esq., Mr. Bissell, and (for Pigeons) T. J. Cottle, Esq., to whose decisions but very few objections could possibly be taken.

Class 1.—DORKING.

7. *First prize*, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. 6. *Second*, Capt. W. W. Hornby, Knowsley Cottage, Prescott, Lancashire. 9. *Third*, Miss Ann Willcox, Nailsea Court, Somerset.

Class 2.—DORKING CHICKENS.

32. *First prize*, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. 29. *Second*, Mr. J. R. Rodbard, Aldwick Court, Wrington, Somerset.

Class 3.—SPANISH.

31. *First prize*, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. 37. *Second*, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. 33. *Third*, R. T. Head, Esq., The Briars, Alphington, Devon.

Class 4.—SPANISH CHICKENS.

First prize, not of sufficient merit. 54. *Second prize*, Boughton Kingdon, Esq., Paul-street, Exeter.

Class 5.—COCHIN-CHINA (Buff or Cinnamon).

87. *First prize*, Mr. J. Cattell, Moseley Wake Green, Birmingham. 73. *Second*, Mr. Thomas H. Potts, Kingswood Lodge, Croydon, Surrey. 65. *Third*, Mr. C. Rawson, The Hurst, Walton-on-Thames, Surrey.

Class 6.—COCHIN-CHINA CHICKENS (Buff or Cinnamon).

106. *First prize*, Mr. W. H. Snell, Shirley Cottage, Norwood, near London. 105. *Second*, J. R. Rodbard, Esq., Aldwick Court, Wrington, Somerset. *Highly commended*—99. Mr. Thos. H. Potts, Kingswood Lodge, Croydon, Surrey. 107. Mr. W. H. Snell, Shirley Cottage, Norwood, near London. 109. Mr. Cyrus Clark, Street, near Glastonbury, Somerset. 114. Mr. James Cattell, Moseley Wake Green, near Birmingham.

Class 7.—COCHIN-CHINA (Dark).

118. *First prize*, Mr. Thomas Atkins, Babbicombe, Torquay. 122. *Second*, Mr. W. E. Gillett, Fairwater House, Taunton, Somerset. 119. *Third*, Mr. William Wevill Rowe, Loughbrook, Milton Abbot, Devon.

Class 8.—COCHIN-CHINA CHICKEN (Dark).

123. *First prize*, Mr. R. T. Head, The Briars, Alphington, Devon. 129. *Second*, Miss Elizabeth Watts, Monk Barns, Hampstead, London.

Class 9.—GAME.

132. *First prize*, Mr. Robert Baker, Ermington, near Ivybridge, Devon. 133. *Second*, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. 131. *Third*, Rev. Charles T. James, Ermington, near Ivybridge, Devon.

Class 10.—GAME CHICKENS.

157. *Second prize*, Mr. Robert Baker, Ermington, near Ivybridge, Devon.

Class 11.—SILKS.

163. *First prize*, Mr. W. E. Gillett, Fairwater House, Taunton, Somerset.

Class 13.—MALAY.

165. *First prize*, Mr. Cyrus Clark, Street, near Glastonbury, Somerset. 167. *Second*, Rev. C. H. Archer, Lewannick Vicarage, Cornwall.

Class 15.—GOLDEN-PENCILLED HAMBURGH.

169. *First prize*, Mr. Josiah B. Chune, Coalbrook-dale, Shropshire. 173. *Second*, Mr. Cyrus Clark, Street, near Glastonbury, Somerset.

Class 16.—SILVER-PENCILLED HAMBURGH.

180. *Second prize*, Mr. Cyrus Clark, Street, near Glastonbury, Somerset.

Class 17.—GOLDEN-SPANGLED POLAND FOWL.

186. *First prize*, Mr. C. Rawson, The Hurst, Walton-on-Thames, Surrey. 191. *Second*, Mr. R. H. Bush, Litfield House, Clifton, near Bristol.

Class 18.—SILVER-SPANGLED POLAND FOWL.

196. *First prize*, Mr. C. Rawson, The Hunt, Walton-on-Thames, Surrey. 199. *Second*, Mr. Thomas H. Potts, Kingsland Lodge, Croydon, Surrey.

Class 19.—POLAND FOWL (White Tops).

208. *First prize*, Mr. C. Rawson, The Hurst, Walton-on-Thames, Surrey. 206. *Second*, Mr. Charles Edwards, Brislington, near Bristol.

Class 21.—BANTAMS (Gold-laced).

222. *First prize*, Mrs. Elizabeth Brown, King's Cottage, Northend, Fulham, London. 223. *Second*, Mr. William Norsworthy, 7, Lower Prospect Place, Exeter.

Class 22.—BANTAMS (Silver-laced).

227. *First prize*, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. 229. *Second*, Mrs. Elizabeth Brown, Northend, Fulham, London.

Class 23.—BANTAMS (White).

231. *First prize*, Rev. Grenville F. Hodson, Chew Magna, Somerset.

Class 24.—BANTAMS (Black).

232. *First prize*, Mr. William Norsworthy, 7, Lower Prospect Place, Exeter. 233. *Second*, Mr. William Norsworthy, 7, Lower Prospect Place, Exeter.

Class 25.—DUCKS (White Aylesbury).

244. *First prize*, Rev. Robert Baker, Compton Martin Rectory, Somerset. 242. *Second*, Rev. Grenville F. Hodson, Chew Magna, Somerset.

Class 26.—DUCKS (Rouen).

245. *First prize*, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. 248. *Second*, Mr. William G. Courtis, 4, Lipson Terrace, Plymouth.

Class 27.—DUCKS (Muscovy).

249. *First prize*, Mr. Thomas Twose, Bridgewater, Somerset.

Class 28.—GEESE.

252. *First prize*, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. 251. *Second*, Mr. C. Rawson, the Hurst, Walton-on-Thames, Surrey.

Class 29.—TURKEYS.

260. *First prize*, Mr. John R. Rudbard, Aldwick Court, Wrington, Somerset. 255. *Second*, Mr. Wm. Northey, Lake Farm, Lifton, Devon.

Class 31.—PIGEONS (Carriers).

266. *Prize*, Mr. William J. Square, Cobourgh-street, Plymouth.

Class 32.—PIGEONS (Barbs).

278. *Prize*, Mr. Edward Burton, Tregolls Cot, Truro.

Class 34.—PIGEONS (Runts).

280. *Prize*, Mr. C. Rawson, The Hurst, Walton-on-Thames, Surrey.

Class 35.—PIGEONS (Fantails).

283. *Prize*, Mr. C. Rawson, The Hurst, Walton-on-Thames, Surrey.

Class 37.—PIGEONS (Trumpeters).

292. *Prize*, Mr. Edward Burton, Tregolls Cot, Truro.

Class 38.—PIGEONS (Almond or Ermine Tumblers).

Mr. Charles Bluett, Hammett-street, Taunton, Somerset.

On the 27th of May, the DEVON and EXETER Botanical and Horticultural Society held an Exhibition of Poultry, Rabbits, and Pigeons, at Exeter, in conjunction with their usual Horticultural Show. Upwards of one hundred and twenty pens of poultry were exhibited, and comprising numerous specimens of a first-rate character. The competition for prizes was limited to residents in the four western counties.

Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, Birmingham, officiated as the Judge of Poultry, and his awards gave general satisfaction.

The following was the result:—

Class 1.—BLACK SPANISH. Cock and two Hens.

First prize, Medal, R. T. Head, Esq., the Briars, Alphington, near Exeter. *Second*, R. T. Head, Esq. *Third*, Mrs. Devenish, Honiton.

An *Extra prize*, for Chickens of 1853 was awarded to Boughton Kingdon, Esq., of Exeter.

Class 2.—BLACK MINORCAS. Cock and two Hens.

First prize, T. Coulson Sanders, Esq., Exeter. *Second*, Mr. Elias Knott, Wonford, near Exeter. *Third*, Clifford Shirreff, Esq., Pinhoe, near Exeter.

Class 3.—DORKINGS (Coloured). Cock and two Hens.

First prize, Medal, J. F. Pearse, Esq., Whimble, Devon. Second, J. F. Pearse, Esq. Third, Charles Harward, Esq., Plymtree, Devon. An Extra prize to Mr. Daniel Hosking, Exeter.

Class 4.—DORKINGS (White). Cock and two Hens.

First prize, Miss Patteson, Feniton Court, Devon.

Class 5.—COCHIN-CHINA (Buffs). Cock and two Hens.

First prize, Medal, not awarded. Two Second, Mr. W. L. Channing, Heavitree, near Exeter. Third, R. T. Head, Esq.

Extra prizes.—For a Cock and one Hen, to Thomas Atkins, Esq., Babbicombe, near Torquay. (These were considered the best birds of the class exhibited, but a second hen having died, during transit to Exeter, Mr. Atkins was prevented competing for the Medal.) For four Chickens of 1853, a Medal to T. Head, Esq. (These chickens were highly commended, and pronounced by the Judge to be the best fowls in the Exhibition.) For Chickens of 1853, to Dr. Scott, of St. Leonard, near Exeter; and to Mr. W. L. Channing.

Class 6.—COCHIN-CHINA (Partridge-Coloured). Cock and two Hens.

First prize, Thomas Atkins, Esq. Second, Mr. Wm. Connett, Magdalen Street, Exeter. Third, W. Weevil Rowe, Esq., Milton Abbott, Devon.

Class 7.—COCHIN-CHINA (White).

First prize, not awarded. Second, Rev. J. Coventry, St. Michael's Parsonage, Ottery St. Mary, Devon.

Class 8.—MALAYS. Cock and two Hens.

First prize, Henry Arney, Esq., Lymptone, Devon.

Extra prize, to Mr. Leonard Berry, Clist St. George, Devon, for a pair of White Malays.

Class 9.—GAME. Cock and two Hens.

First prize, Mr. Wm. Bickell, St. Sidwell's, Exeter. Second, Mr. Daniel Hoskins, Exeter. Third, Mr. Wm. Bickell.

Class 10.—HAMBURGH (Golden-spangled). Cock and two Hens.

First prize, Rev. J. Coventry. Second, W. Weevil Rowe, Esq.

Class 11.—HAMBURGH (Golden-spangled). Cock and two Hens.

First prize, Rev. H. N. Venn, Honiton, Devon. Second, Augustus Paul, Esq., Torquay. Third, W. Weevil Rowe, Esq.

Class 12.—HAMBURGH (Silver-pencilled). Cock and two Hens.

First prize, W. Weevil Rowe, Esq. Second, Miss Dyott, 2, Torwood Mount, Torquay. Third, Mr. James Westcott, Thorverton, Devon.

Class 13.—HAMBURGH (Silver-spangled). Cock and two Hens.

First prize, W. R. Spragge, The Quarry, Paignton, Devon. Second, Augustus Paul, Esq. Third, W. Weevil Rowe, Esq.

Class 14.—POLANDS. (Black with white crests).

First prize, Miss Dyott. Second, Miss Selina Northcote, Upton Pyne, Devon.

Class 15.—POLANDS. (Silver).

First prize, W. Weevil Rowe, Esq.

Class 16.—BANTAMS. (Gold-laced).

First prize, Mr. W. Norsworthy, Rack-street, Exeter.

An Extra prize for a pair of excellent Sebright Bantams, awarded to Mr. John Gulle, of Exeter.

Class 22.—TURKEY. Cock and Hen.

First prize, Medal and commended, C. Shirreff, Esq. Second, R. T. Head, Esq.

Class 23.—GEESE. Gander and two Geese.

First prize, Medal, C. Shirreff, Esq.

Class 24.—DUCKS (White Aylesbury). Drake and two Ducks.

First prize, Medal, Mr. W. Brown, Redgate Farm, Shute, near Axminster, Devon. Second, Mr. W. Brown. Third, W. Weevil Rowe, Esq.

Class 25.—DUCKS (Coloured). Drake and two Ducks.

First prize, Mr. Thomas Beedell, Upton Pyne. Second, W. Kingdon, Esq., Hacombe House, near Exeter. Extra prize to Mrs. St. John, Ideford Rectory, near Chudleigh, Devon, for a Muscovy Drake and two Ducks.

Class 26.—GUINEA FOWLS. Cock and two Hens.

First prize, Miss Selina Northcote.

Class 27, 28, and 29.—RABBITS.

The longest-cared, best marked, and heaviest, Charles Ballance, Esq., Taunton. Extra prize for two Rabbits, to Mr. Myddleton, of Exeter.

Class 30.—PIGEONS.

CARRIERS.—Best pair, Mr. W. L. Channing. *ALMOND TUMBLERS.*—Mr. W. L. Channing. *NUNS.*—Miss S. Northcote. *FANTAILS.*—Best pair of black, Henry Adney, Esq. Best pair of whites, Miss S. Northcote. *JACOBS.*—Miss S. Northcote.

WEST KENT HORTICULTURAL AND POULTRY EXHIBITION.—The 14th, 15th, 16th, and 17th were great days for the quiet little village of Farningham. In "the good old times" of coach-travelling, the Bull Inn, of the said village, was a resting-place, of some mark, for the Maidstone, and Malling, and Weald of Kent coaches; but those days are now mere themes of history, and it can be but upon such gatherings as we now have to note that Farningham can be excited from its peacefulness. Mr. Dray, of the well-known firm of Deane & Dray, has his residence in this beautiful village,

and he was the prime mover of the efforts to obtain this Exhibition; aided by a select and energetic committee, those efforts resulted in one of the most successful and most pleasure-giving exhibitions that has yet occurred. The whole village, with its triumphal arches, down to the Elder bushes by the cottagers doors, were wreathed with flowers; and every face looked as if care was triumphantly voted out of season. Nor must we omit to note that Farningham owes much to Mr. Baptiste Thomas, the Secretary of the Poultry Exhibition. To fill that office effectually, requires a rare combination of energy, judgment, good humour, and firmness, and fortunately Mr. Thomas possesses them.

In the *Flower Show*, Mr. Cole, gardener to E. Collyer, Esq., of Dartford, and Mr. Frost, gardener to E. Betts, Esq., of Proston Hall, near Maidstone, had it all their own way, and that way is pre-eminently good. Mr. Cole's plants have triumphed too often at Chiswick and the Regent's Park to require any particular praise; but we could not but perceive a freshness and unruffledness about them that told they had not just endured a *long* journey. Mr. Frost is on the quick step after Mr. Cole, and ere long will be able to wrestle with him on more equal terms. We must here pause to remark, that Mr. Frost's six *Fuchsias* were the noblest and best grown specimens we ever saw. They were single-stemmed, and trained as most symmetrical pyramids, clothed with branches and showers of bloom from the surface of the pot to the very point. They were *Carltona* (scarlet), *Pearl of England* (light), *Voltigeur* (scarlet), *Kossuth* (scarlet), *Expansa* (light), *Ajax* (scarlet).

The *Poultry Show*, including Pigeons and Rabbits, included nearly 350 pens.

The arrangement in a quadrangle, under one continuous tent, open in the centre, afforded that perfect ventilation which is one of the best preservatives of the fowls from disease.

To expect that a first Exhibition of the kind should be without considerable errors would be to expect what never yet has been achieved; and we, therefore, notice the few which were committed in the most friendly spirit. The first, and most grave error, was to announce as a *three days'* show that which was really one of *four* days. The clearest and unswerving from announcement should be made on this point, because many exhibitors object, on sound principle, to protracted Shows. Another error was, combining dark and light Shanghai Chickens in one class, for they never can be judged satisfactorily when so united. Thirdly, it was an error to offer a medal—the chief prize of the day—"for the best brood of chickens of any breed." This is an error, because neither the owners, nor the judge of the pens exhibited, can ever be satisfied in comparing together Dorking, Shanghai, Spanish, Poland, and Hamburg Chickens. There ought to be such a Medal for each variety.

The Judge was Mr. J. Baily, of Mount Street, Grosvenor Square.

Class 1.—COCHIN-CHINA (Buff or Cinnamon). For the best Cock and two Hens of any age above eighteen months.

6. First prize, John Fairlie, Cheveley Park, Newmarket.

(For the best Cock and two Hens, not exceeding eighteen months old.)

15. Second prize, John G. Hodgen, Croydon. Age ten and twelve months old.

Class 2.—COCHIN-CHINA (Brown and Partridge-feathered). For the best Cock and two Hens of any age above eighteen months old.

20. First prize, William Dray, Farningham. Pullets, age, eleven months.

(For the best Cock and two Hens not exceeding eighteen months old.)

22. Second prize, John Fairlie, Newmarket.

Class 3.—COCHIN-CHINA (White). For the best Cock and two Hens not exceeding eighteen months old.

25. First prize, Thomas Bloomfield Fairhead, Cressing, Essex. Age, twelve months. 26. Second prize, John George Hodgen, Croydon. Age twelve and fourteen months.

Class 4.—COCHIN-CHINA (Chickens of any colour). For the best Coop of Six or more Chickens of one brood under two months old.

32. First prize, Isaac Jecks, Newton Lodge, Trouse, Norwich. Age, seven weeks. 31. Highly commended, Isaac Jecks, Newton Lodge, Trouse, Norwich. Age, eight weeks.

(Chickens of any colour, under three months old.)

114. First prize, Elizabeth George, Rookery, Chaldon, near Coulsden, Surrey. Hatched fourth week in March. 40. Second prize, Isaac Jecks, Newton Lodge, Trouse, Norwich. Age, ten weeks. 47. Highly com-

mended, James Nightingale, Hersham, Walton, Surrey. Hatched March 25th. 49. George W. Johnson, Winchester. March 18th.

Class 5.—DORKING (Single-combed, or Rose-combed). For the best Cock and two Hens above eighteen months old.

52. First prize, Stephen Lewry, Horley, Surrey. Age nineteen months. 54. Highly commended, John Fairlie, Cheveley Park, Newmarket.

(For the best Cock and two Hens, under eighteen months old.)

58. Second prize, Stephen Lewry, Horley, Surrey. Age, eleven months. Class 6.—DORKING (White). For the best Cock and two Hens above eighteen months old.

60. First prize, Joseph Robins, Dartford.

Class 7.—DORKING (Chickens of any colour). For the best Coop of six or more Chickens of one brood not exceeding two months old.

62. Second prize, Stephen Lewry, Horley, Surrey. Age, seven weeks. (Under three months.)

64. First prize, Stephen Lewry, Horley, Surrey. Age, two months twenty-four days.

Class 8.—SPANISH. For the best Cock and two Hens above eighteen months old.

72. First prize, Edward Owen, Shadwell. Hatched May, 1851. (Under eighteen months.)

73. Second prize, Edward Owen, Shadwell. Hatched June, 1852.

Class 10.—HAMBURGH (Golden or Silver-pencilled). For the best Cock and two Hens above eighteen months old.

78. First prize, Josiah B. Chune, Coalbrookdale, Shropshire. Age, sixteen months.

Class 11.—HAMBURGH (Golden or Silver-spangled). For the best Cock and two Hens above eighteen months old.

82. First prize, C. Rawson, Walton-on-Thames. (Under eighteen months old.)

87. First prize, Parkins Jones, Jun., Fulham. Age, thirteen months.

Class 13.—POLAND FOWL (Golden or Silver, with or without Ruffs or Beards. For the best Cock and two Hens above eighteen months old.

89. First prize, C. Rawson, Walton-on-Thames. Silver-spangled. 90. First prize, C. Rawson, Walton-on-Thames. Golden-spangled.

(Not exceeding eighteen months.)

96. First prize, S. C. and C. N. Baker, Chelsea. Silver-spangled.

Class 14.—POLAND FOWL (Black with White Crests). Under eighteen months.

101. First prize, Thomas P. Edwards, Lyndhurst, Hants. Age, seventeen months.

Class 16.—CROSS BETWEEN ANY BREED. Under eighteen months.

105. First prize, James Howard, Bedford (cross between pure speckled Dorking and Malay). Age, ten months.

Class 18.—GAME FOWL OF ANY COLOUR. For the best Cock and two Hens of any age above eighteen months.

118. First prize, W. W. Edwards, Farnborough, Kent. Age, eighteen months.

Class 19.—BANTAMS (Gold-laced). For the best Cock and two Hens.

126. First prize, John Clinton, Maidstone, Kent. Age, nine months. 124. Second prize, George C. Adkins, Edgbaston, Birmingham.

(Silver-laced.)

130. First prize, John Fairlie, Cheveley Park, Newmarket, (over eighteen months).

(Black and Raven.)

136. First prize, William Dray, Jun., Farningham. 137. Second prize, John Fairlie, Cheveley Park, Newmarket, over eighteen months.

(Any other variety.)

138. First prize, S. C. and C. N. Baker, Chelsea (Nankcen), under eighteen months. 141. First prize, John Fairlie, Cheveley Park, Newmarket (white), over eighteen months.

Class 20.—DUCKS. For the best white Aylesbury Drake and two Ducks.

147. First prize, James M. Bryan, Gravesend. Age, fourteen months. 149. Second prize, Joseph Dutton, Bury St. Edmunds. Age, sixteen months.

(Other Varieties.)

153. First prize, S. C. and C. N. Baker, Chelsea. (Hook-bill Patana Ducks.) Age, under eighteen months.

Class 21.—DUCKLINGS, OF ANY SORT. Hatched since Christmas.

160. First prize, James Margesson Bryan, Gravesend. Hatched March 3rd. 161. Second prize, John Fairlie, Cheveley Park, Newmarket. Age, four months.

Class 22.—GEESE. For the best Gander and two Geese.

165. Second prize, J. Fairlie, Cheveley Park, Newmarket. Pen of Geese over eighteen months. 164. Third prize, C. Rawson, Walton-on-Thames. Toulouse Geese under sixteen months.

Class 24.—TURKEYS. For the best Cock and two Hens.

172. First prize, John Fairlie, Cheveley Park, Newmarket. Age over eighteen months. 171. Second prize, John Fairlie, Cheveley Park, Newmarket. Under eighteen months.

Class 27.—DISTINCT VARIETIES.

181. First prize, John Franklin, Bexley Heath. A Hen, name of breed not known. (Said to be a Shanghai Silk-fowl.) Age twelve months. 194. First prize, Augustus Balls, Harold's Park, Nasing, Essex. Three Buff Poland Fowls, laced white. 211. First prize, S. C.

and C. N. Baker, Chelsea. One white Poland Cock and two Hens. Not exceeding eighteen months. 187. Second prize, John Fairlie, Cheveley Park, Newmarket. One Cochinchina Black. 190. Second prize, John Fairlie, Cheveley Park, Newmarket. One Scotch Bakes or Dumpies. Age, over eighteen months. 192. Third prize, Arthur Walter, Greenhithe. One Cock and two Hens, White Silk Cochinchina. Age, fifteen months.

PIGEONS.

224. George C. Adkins, Edgbaston, Birmingham. One pair of Almond Tumblers. 225. George C. Adkins, Edgbaston, Birmingham. One pair of red Almond Tumblers. 232, 233, and 236. (Fantails, Runts, and Tumblers.) 240. Josiah B. Chune, Coalbrookdale, Shropshire. One pair of Trumpeters. Age unknown. 270. Augustus Balls, Harold's Park, Nasing, Essex. Dun Carriers. And 288, Short-faced Redbeards.

RABBITS.

Prizes were taken by J. Clinton, Maidstone; J. Mitchell, Dartford; J. H. Wynne, East Smithfield; and by T. Dray, and W. Turner, Farningham.

There were some extra stock, concerning which we could not obtain particulars.

SEA WEEDS.—No. 4.

We will now proceed with the other members of the order Fucaceæ.

PHYCOPHYCUS.—Kütz.

"Root composed of branching fibres; frond cylindrical; air-vessels simple; receptacles terminal, cellular, pierced by numerous pores. Name from two words, signifying thick, and a sea weed." This plant grows in rocky pools; the colour olive, but becoming black when dried.

FUCUS.

"Root shield-shaped; frond linear; air-vessels simple. Name from *Fucus*, a sea weed."

Fucus vesiculosus.—"Frond with a mid-rib, plane, with fronds in two ranks, generally with vesicles placed in pairs; margin entire; receptacles mostly elliptical, yellowish, terminating the segments." This *Fucus* is very common, covering the rocks with its slippery fronds. Dr. Johnston, in his Flora of Berwick-upon-Tweed, says, that it grows plentifully at the margins of the river for the space of a mile and a half from its mouth; but that the river plants are thinner, darker coloured, and less loaded with vesicles than the marine. He also adds, that it is the sea-ware most highly prized for the manufacture of kelp, and that, in the Scottish islands, this *Fucus* forms a considerable part of the winter food of horses, cattle, and sheep, which seem instinctively to migrate from the hills to the shore, at the ebbing of the tide, to feed upon it. It has a variety of names; in Scotland, Kelp-ware, Black Tang, and Lady-wrack; in Gotland, according to Linnæus, it is called Swine Tang, because they boil it and mix it with a little coarse flour to feed the pigs. In the Hebrides, salt is not required for the cheeses, it is sufficient to cover them with the ashes of this truly useful plant, so saline is it; while in other places it is used for fuel. And the iodine which it yields must not be forgotten. How wonderful it is that a plant so universally useful should be so abundant also. "*Fucus vesiculosus*," says Dr. Harvey, "is found as well on the north-west coast of America, as on the shores of Europe." Indeed, in reading, lately, "Darwin's Journal of Researches round the World," I met with a striking account of the Kelp. Speaking of Tierra Del Fuego, he says, "that this plant grows on every rock, from low water mark to a great depth, both on the outer coast, and within the channels. There was not one rock which was not buoyed by this floating weed; the good service it thus affords to vessels navigating near this stormy land is evident; and it certainly has saved many a one from being wrecked."

Who that reads this shall ever look upon a *Fucus* again as a thing too common to be noticed? We are too apt to neglect what is common, just because it is so. But this is not true wisdom, for the commonest things are often those which we could least do without. "The beds of this Sea Weed," continues Darwin, "even when not of great breadth, make excellent natural breakwaters. It is quite curious to see, in an exposed harbour, how soon the waves from the open sea, as they travel through the straggling stems, sink in height, and pass into smooth water." I know not how it may be with my readers, but my own admiration rises higher and higher as I discover its varied uses. Well might the

Psalmist say, "In wisdom hast Thou made them all." Here is a plant, requiring no assistance from man, placed in situations where it is most needed; a *gifted* plant, I may call it, for to how many purposes it may be applied, food for cattle, manure for land, Kelp-salt for cheeses, buoys for dangerous rocks, and breakwaters against the mighty waves of the ocean; besides, its iodine. What a field for thought. What a variety of ideas may be suggested by this common and sombre-coloured plant of the rocks. What "sermons" on "stones," as well as "in" them. Unnoticed by the generality of passers by; or thought of as only too common to care about; yet there it is, ready to be made useful at any time, or for anybody who may want it. This humble ocean weed may bring to our mind some Christian, unknown to the world, clothed in humility, but precious in the sight of Him who seeth not as man seeth; who looks not at the outer appearance, but at the heart. Of one "ready to every good work." What elevating views of the wisdom and goodness of God the examination of his works produce. "Such knowledge is too wonderful for me, I cannot attain unto it." The closer our examination, the greater our wonder:

"the well directed sight,
Brings in each flower an universe to light."

I think the only place in the Bible where Sea Weeds are mentioned, is in the book of Jonah, where the disobedient prophet speaks of the weeds being wrapped about his head.



The plate of this specimen of *Cystoseira granulata*, given as an example of one of the Fucaceæ, is taken from a plant at or near Joppa, or Jaffa, the very place where Jonah found a ship; where the Apostle Peter lodged near the sea-side; and where Dorcas, the friend of the widows, lived and died, and was restored to life again.

The other species of Fucus are—

F. CERANOIDES.—"Less common than the last, and thinner in every part."

F. SERRATUS.—"Very common, 2—6 feet long; dark olive-green."

F. NODOSUS.—"Common; substance extremely tough and leathery."

F. MACKAIL.—"Found on muddy sea-shores, west of Ireland, and north and west of Scotland."

F. CANALICULATUS.—"Rocky coasts, near high water mark. Cattle are exceedingly fond of this plant, and never fail to

browse on it in winter, as soon as the tide leaves it within their reach."

HIMANTHALIA.

"Frond top-shaped; receptacles very long, strap-shaped, repeatedly forked. Name from two words, signifying a strap and a branch; common English name, Sea-thongs."

H. LOREA.—"Rocky sea-shores common; frond about an inch high; receptacles two;—10 feet long, thong-like; dark olive-green."

Dr. Landsborough, in his delightful little work, "Popular History of British Sea Weeds," speaking of this plant, says, "When dredging, in August, 1849, off the Island of Lismore, in Appin, I saw it growing in such abundance as almost to retard the progress of the boat; for though well rooted, its floating receptacles covered the surface of the water. Some of them must have been of great length. The one which I took up, without any selection, measured twelve feet; others, I doubt not, were much larger. In Cornwall they are, at times, even twenty feet long."

S. B.

ON THE MANAGEMENT OF SILKWORMS.

WITH COMMENTS AND ADDITIONS.

By the Prior Jacopo Ricci.

(Continued from page 210.)

SECTION III.

THE bunches should be tied like a fan, so that the air may penetrate through them, and the worm may conveniently form his cocoon without any danger of what are called *doubles*, when two worms spin too near each other. These doubles are rejected by the merchant as only worth half the single ones.

The bunches of twigs must not rest on the paper that covers the hurdles, which must be raised sufficiently to allow the twigs to rest on the reeds—a precaution necessary for the convenient execution of the final cleansing, which must take place when the worms begin to ascend. The ordinary little tables are used, but the cleansing must be done by degrees: the bed from one table must be removed, the paper replaced, and the worms returned immediately. It will be well to leave spaces at about a foot's distance from each other, where a bunch of twigs may be placed, as we shall see by-and-by.

And now I must offer a few observations on the worms' last meal. The leaves must be the very best, free from all extraneous matter, and especially from the stalks, and must be given in small quantities, as they seem to need it. The little inclination they shew for food, and their desire to climb upon the leaves, make it necessary to give it sparingly, as, otherwise, the beds would be too much loaded and become offensive. The digestion of the worm is much weakened at this period, and if they are induced to eat more than they ought, they suffer loss of strength in that organ which serves both as stomach and intestines.

The last cleansing of the hurdles, and the completion of the *bush*, require patience and attention. When many worms are gone up, the cleansing must take place, which, though a tedious process, is best accomplished by means of the little tables, two or three of which are to be filled at a time with worms removed with great care. This done, the sheets of paper, loaded with refuse, are removed, fresh papers arranged, and the worms made to fall upon them by gently inclining the tables. The worms may have a little food if they seem to require it. The same method must be followed till all are cleansed, taking the greatest care to remove all the beds, and to touch those remains of leaves to which any worms are attached with tenderness, so as not to hurt them, which is too often done either by carelessness or too great anxiety.

In placing the worms on the hurdles, it is necessary, in order to give them sufficient space, to arrange them in squares of about eighteen inches, around the bunches of twigs, keeping at least six inches between the square and the nest. This operation may be accomplished in half-a-day by six or eight people who understand their business. At this stage fresh air must be given, by opening all the doors, windows, and ventilators, and by lighting fires in the

chimney. It will be prudent to observe whether the temperature of the external air be as high as 16° , for should it be below that point it must not be so freely admitted, but the ventilators must be opened by degrees, and fires in the stove and chimney must warm the air before it enters the working room; and thus a gentle ventilation will strengthen the worms. The purification, with sulphuric acid and nitre, may be resorted to, and the hygrometer watched by those who have been wise enough to procure such an instrument, and who wish to send their worms to the bush neither sick nor weak, as too often happens when this process is trusted to persons inveterately bigotted to old ways.

The bush must now be completed by placing twigs at intervals, and uniting them at the top, so as to form a kind of roof, and in the spaces between the squares should be other little twigs, but always so arranged that the air may circulate freely through them. When these are loaded with worms, more branches must be placed between the middle bunches and those on the edge of the hurdles: thus rows of little bushes are formed quite across the hurdle, at a distance of eighteen inches apart.

Then the whole must be carefully looked over, and those worms known to have reached maturity must be placed near the twigs, and a little food occasionally given to those who show an inclination to eat. If, after the lapse of twenty-four hours, there should be any worms who neither eat nor climb, they must be removed to a dry room, at a temperature of 18° , where they will gain strength to enable them to ascend into the bush; or, if any have not reached maturity, they must be covered with leaves, on which light twigs may be placed: they will crawl upon these, and may be thus conveyed to the bush where they are to spin.

The most perfect cleanliness being observed, every kind of impurity and damp scrupulously avoided, and the air purified, I will now offer some observations on the rules to be observed in the room until the worm has completed his fifth stage.

When the worms begin to ascend, the temperature must be maintained at $16\frac{1}{2}^{\circ}$ or 17° of Reaumur's thermometer (70° F.); and if the external air be colder, it must not be admitted directly upon the bush, but must be made to circulate gently, keeping the ventilators open, as circumstances require, and refreshing the air in the adjoining apartment. Too much wind makes the worm torpid, causes him to fall from the bush, and hinders his work; but great care must, also, be taken that the sun never shines in the bush, and thus heat the worms too much, especially at the commencement of their work.

The room must be kept dry to absorb the damp occasioned by the various secretions of the worms, as, if this be neglected, they are liable to diseases, which frequently occur in the fifth stage, to the great injury of the silk. If the worm has been properly treated, he completes this stage by spinning good silk, and forming an even cocoon there, depositing his sheath, or skin, and becoming a chrysalis. I shall conclude this section with some important observations.

I know it will be difficult to introduce this new method of forming the bush without touching the worm, which is really injured by such treatment, even though no ill consequence be apparent. As we have said before, the method employed by our people of throwing them into the bush is very prejudicial. The bush is generally formed in a corner of the room, very confined sometimes, even covered over, which is a manner of proceeding quite inconsistent with the principles already laid down, and with the attention the worms require during this epoch. It is, surely, clear to every one that the worms must prefer to follow the instincts of nature, by climbing into the bush instead of being thrown there by persons who are naturally careless and inveterately ignorant and obstinate. I have seen the bush covered with sheets, and even an outer covering over that; but I have seen, at the same time, that great numbers of worms have been suffocated without beginning their work, or before it is properly finished.

At all events, let the bush stand in the middle of the room, and not be confined in the branches. One would think that even the most stupid and ignorant attendants might see that such an arrangement is necessary; but "It always was so," is answer sufficient, even though aware that their obstinacy injures themselves. The sheets of paper on the

hurdles, and under the bush, contribute much to the cleanliness of the beds; nevertheless, our people will not use them. The hurdles must not be touched, but the attendants should have ladders to mount to them. This is quite indispensable if the bush be formed in the hurdles which are raised above each other in tiers, and which must be more firmly made than those in common use.

(To be continued.)

CLIANTHUS PUNICEUS.

I HASTEN to send you an account of a rich floral treat I have partaken of to-day, in the shape of the above-mentioned plant, now in bloom at Thos. Thornhill's, Esq., Woodleys, near Woodstock, Oxon. The plant measures four yards in extent of surface upon a wall; it is two yards high, and the flowering branches, which number 75, protrude horizontally (many of them requiring support from their weight of bloom) a yard from the wall. The average number of clusters on each branch is 35, and the average number of flowers on each cluster averages nine; thus giving 2590 racemes, and 23,310 single blooms. The gardener, Mr. Bishop, informs me, that he raised the plant from a cutting; and it has been planted out in the open border three years, in an aspect much inclining to the east. I saw it in the winter, when it was protected with a sort of framework consisting of old window-sashes and matting. Mr. B. is proud of his *protege*, and, indeed, he has reason, for, as its systematic name implies, it is glorious. This is a plant well worthy of recommendation, and more general cultivation; it is half-hardy, grows rapidly, and when placed in a position similar to the one I am describing, so as to command the windows of the mansion, and full view from the lawn, the effect of such a mass of crimson, Oriental-looking bloom, is exceedingly bright and beautiful.

BLACK BEETLES.—If E. B. will write to Messrs. Gill and Ward, Ironmongers, Oxford, they will, in all probability, be enabled to forward a trap, which I can say, from experience, will, in course of time, eradicate every black, or any other beetle whatsoever, from off the premises, doing destruction also to the poor "cricket of the hearth." When we came to this house we brought our female servants with us. Two or three days afterwards, a long walk detained them from home until after dark, and very soon after they did return an awful screeching issued from the kitchen, which might have served one to suppose that murder, at least, was in committal. The fact was, upon lighting a candle they became aware that the floor of the apartment was literally covered with black beetles; and never having seen any before, their first impulse was to mount upon the tables and sound their bugles. All manner of means and recipes were resorted to, to rid us of the vermin, but of no avail, until I happened to spy out the trap in Messrs. Gill and Ward's shop-window. It is a box made after the fashion of an inclined plane, up which the beetles walk, and slip down a moveable glass well into the trap, from which there is no escape. The trap is baited with flour, and the vermin emptied as required (first removing the glass) into boiling water, and there is an end of them. Persevere after this fashion, and they will soon cease to annoy; to see a beetle here now is a rarity.

UPWARDS AND ONWARDS.

NOTES OF A GARDENER.

FORCED GERANIUMS.—I have found out that forced Geraniums have a great tendency to seed. This is the second year that I have observed it, and an intelligent nurseryman told me yesterday that he had made the same observation when reminded of it by me. There is also another great advantage attending this circumstance, namely, that the first few blooms are usually pollenless, and we are thus pretty sure of our cross.

AMMOCHARIS CORANICA.—The *Botanical Magazine* figures one *Ammocharis coranica*, pale rosy; and describes another less handsome, which was the last I flowered, and which I think the true one. Mine was dirty dark purple, very revolute, in fact, quite a *Nerine* in appearance; very distinct from *falcata*, which I often flower, and is larger in all parts

—rosyish-white, like *Coranica* of the "Botanical Magazine." *Falcata* seeded with me like a small *Crinum* seed.

OXALIS (CAPRINA?).—The very handsome yellow with spotted leaf *cernua*? * flowers in the greatest beauty in the temperate stove, having been started quietly in the greenhouse. It should be allowed to grow wild, and to overhang the side of the pot. *Staked*, you lose half its beauty; it looks well hung up, but should have a pan under it, and a copious supply of water by pan, or otherwise. Henderson's beautiful double yellow *Oxalis* requires strong sunshine and plenty of water to expand its blossoms, therefore should not be flowered too early; the stove also is required for this. This has no spots, at least, only *one*, where the leaflets join the stalk.

OPORANTHUS LUTEUS flowers best when taken up after the decay of the foliage, and kept a week or two out of the ground. When left in the ground the flowers are fewer, and the foliage disproportionately plentiful at flowering time, which is not the case after the bulb has been ripened out of the ground. In fact, they are treated like *Colchicums*, with which they were at one time confounded.—HYBRIDIST.

* It is *cernua*.

TO CORRESPONDENTS.

DISSECTING THE LEAVES OF TREES.—The Rev. A. W. B. has obliged us with the following directions:—"The leaves are put into rain water, and allowed to remain without an exchange of water until decomposition is carried to the requisite extent that they may be freed from their cuticle and pulpy matter. After macerating them for a short time in fresh, clear water, they may be bleached by immersion in a diluted solution of chloride of lime (one-sixth chloride to five-sixths water). They must be well washed from this fluid when sufficiently whitened, and quickly dried before the fire or in the sun. Care must be taken not to allow the destructive process to be carried too far, or the fibrous structure will become injured; nor must the specimen remain too long in the chloride, or injury will also arise. Leaves with strong fibre should be preferred. The fibrous parts, and also seed vessels, and calyxes should be cleared by a fine camel hair brush. When the pulpy matter adheres too strongly, it may be removed by a stream of water poured upon it."

MELONS (*Verax*).—You are quite right; they are not, at the best, worth one-half the trouble of growing them, and they are now thought too common to be even tasted by people of high quality, and yet they must have them at every summer dessert, but only to make up the proper number of dishes in a fashionable dessert. There is no doubt but you could grow young Pines in the narrow Melon pits, and fruit them out of pots in the widest range.

LOBELIA RAMOSA (*Ibid*).—It is an annual, and one of the best of them, and can only be increased by seeds; it is, also, of the half-hardy class, and will not stand the winter; but it is an easy plant to move from a seed-bed, or from bed to bed. *Lobelia syphilitica* is propagated by cuttings and suckers in the spring; like the old *fulgens*, and *caelestina*, is good from cuttings, but better from seeds.

BEES.—M. E. S., who writes from Stanley, says—"Having read Mr. Payne's Calendar for June, where he states the heavy losses of bees, I beg to state that it is not so either with me or my neighbour. I have six old hives, kept all winter, and have not lost one stock; they are all in the common straw hives of large size. The spring is very late with us, yet I think my bees are very forward, as I have already five swarms: the first, May 22; the second, May 23; the third, May 25; the fourth, May 26; and the fifth, May 27. I never had a swarm so early before. We calculate to be two or three weeks later here (Yorkshire, West Riding,) than you are in the south. Having put my first swarm in one of Neighbour's Improved Cottage Beehives, I found that they did not work well, as there were hundreds that stayed clustered to the hive in a state of confusion all day. I was advised to enlarge the hive, which I have done, and they work very hard, and all my bees are working very well." [The reason of your bees not working in Neighbour's hive, was from its being too small. We should like to be informed, at the end of the season, what your swarms weigh, and how long you have used these very large hives.—J. H. P.]

BEES.—J. A. says—"I have an old round-topped straw skep, the bees in which were few in number, and their provisions scanty at the back end of last year, but by feeding the bees they survived the winter, and now seem to be doing so well that I expect a swarm within a fortnight (that is not late for this part of the country—the earliest swarm hereabouts was on the 1st instant). Now, I want to abolish the old skep, as past service, and at the same time save the bees; and I want you to tell me which is the best way to do so. My idea was, to let them swarm, and about a fortnight after, when all the brood left in the old hive would have come into active life, to drive the bees into another skep." [There appears no objection to adopting the plan proposed, but wait the "piping" of the queens before you set about it, and be prepared with some dried puff-ball, or "*Racodium cellare*;" for unless a hive is quite full with bees it never drives well, and it is impossible, without fumigating, or cutting out the combs, to dislodge the bees that remain in the hive, for the queen is very likely to be with them.—J. H. P.]

MOTH (*T. M. W.*).—No moth has reached us as you state.

SPANISH FOWLS (*Grove House*).—Barley-meal, wheat, barley, and rice, with plenty of green food, will be the best diet. We cannot tell the cause of their laying soft eggs, as we do not know how you feed them. Spanish lay the largest eggs, but, under proper treatment, we believe that Shanghaes lay the greatest number, and do so in winter, when they are most needed.

APPLE SEEDLINGS (*Apple Pippin*).—Nine out of ten will probably prove mere crabs. Turn them, without disturbing the roots, out of the

pots into the open border; thin them to a foot apart in the autumn, planting those removed at the same distance apart. Let them grow there until large enough to furnish scions for grafting, as you propose; mulching over the roots through each summer will promote their growth.

CHARCOAL DUST (*Ibid*).—This, soaked in pig-sty drainage, will be an excellent manure for your wheat and bean soil. Plough it in just previously to the sowing.

COLOURING GLOUCESTER CHEESES (*A Dairymaid*).—The outside colouring of these cheeses is effected by mixing Arnatto in ale, and rubbing the mixture over the cheeses by the aid of a flannel.

IRON WATER TANKS (*W. C.*).—Water standing in rusty iron tanks does not usually become impregnated with the rust or oxide of iron. We should have the insides scoured thoroughly, then painted with melted pitch, and have care taken that they are kept constantly filled with water. Water impregnated with iron is injurious to plants.

RHUBARB VINEGAR.—M. S. will be much obliged by a recipe for making Vinegar from the stalks of Rhubarb.

LEMONG-COLOURED BANTAMS (*J. P. L.*).—We cannot tell where you can obtain eggs of this variety.

GOAT'S MILK CHEESE.—F. H. would be very much obliged by directions for making this.

VARIOUS (*A Subscriber*).—Prune your fruit trees in autumn; plant your celery in a trench, or on the surface with plenty of manure. Grow those flowers in your Greenhouse which are most readily sold in your neighbourhood.

SPANISH HEN (*Newberry*).—Your hen frequently going on to her nest without laying indicates that there is disease of the egg-passage. It is, probably, now too late to do her any good. If she is alive, give her a pill of one grain of calomel and one-twelfth of a grain of tartar emetic. Let her be also put upon a rice and potato diet for a few days.

CABBAGE SEED (*A Twelve-months' Subscriber*).—No better Cabbage is grown, for general purposes, than "The London Market." You can get it of any seedsman who advertizes in our columns.

POULTRY-KEEPING (*Veritas*).—It would be extreme cruelty to keep fowls in a place eight feet square; cruelty to them, and the source of endless annoyance to yourself.

CUCUMBERS PRODUCING ONLY MALE BLOSSOMS (*G. Everton*).—This is caused, probably, by the temperature being too low.

MEAT FOR CHICKENS (*Prevention, &c.*).—As they are in good health, do not trouble yourself about giving them any other animal food than the bones and scraps from your own table. It is more important, in a confined space, to supply them daily with green food. Other question next week.

BLACK BEETLES.—If E. B. will spread a few garden mats along any walk or path adjoining a plot of grass or a strawberry bed, he may kill black beetles by the thousand, the mats to be laid down in the evening, and examined the first thing in the morning. Another mode I found answer very well, sink stone jars or tin pails in the ground, the lip of the dish level, or a little lower than the ground around, cover the dish with a piece of board a foot broader than the dish, leaving room for the beetles to crawl under; rub the mouth of the dish with any stinking grease or dripping, and put two or three inches of water in the bottom; the grease to decoy them down, and the water to drown them when in.—A SUBSCRIBER.

EDWARDSIA GRANDIFLORA (*A Subscriber*).—This is a half-hardy perennial, with yellow flowers. It will endure our climate with no other protection than a wall. We do not know such a plant as *Genista fragrans*.

ROSES WITH GREEN CENTRES (*Greenhorn*).—This is usually incurable, and if a Rose persists in producing green centred flowers, root it up, and try some other variety. Before doing so, however, try what manuring the soil will effect, as some good gardeners, and among them Mr. Weaver, think it is sometimes occasioned by the soil being too poor.

NAME OF PLANT (*Greenhorn*).—Your plant is the *Enothera prostrata*, or, as Mr. Beaton says, "the hook name" is *riparia*. It is one of the best for bedding, but equally beautiful as a single-bunch plant in the mixed borders, or as a front plant, from its being a dwarf.

PELARGONIUMS AND CINERARIAS.—*A County Dublin Subscriber* wishes to renew his collection of Pelargoniums and Cinerarias; his present collection contains:—*Pelargoniums*.—1. Belle of the Village. 2. Centurian (Beck). 3. Crusader (Hoyle). 4. Forget-me-not. 5. Magnificent (Foquett). 6. May Queen (Hoyle). 7. Mont Blanc. 8. Negress. 9. Orion. 10. Painted Lady. 11. Pearl. 12. Rosy Circle. 13. Duke of Cornwall. 14. Vesta (Gaines). *Fancy Pelargoniums*.—15. Alboni. 16. Anais. 17. Lady Rivers. 18. Mazeppa. 19. Ytoluiskii. 20. Nosegay. *Cinerarias*.—1. Adela Villiers. 2. Alboni. 3. Annie. 4. Cerito. 5. Climax. 6. Defiance. 7. Edmondiana. 8. Flora M'Ivor. 9. Jenny Lind. 10. Lola Montes. You should discard from your collection of Pelargoniums—Orion, Painted Lady, Rosy Circle, Duke of Cornwall, and Vesta. From your fancy class of ditto—Lady Rivers, Mazeppa, and Nosegay. You wish to add sixteen of the large varieties, and eight of the smaller; the following will suit you:—*Large Varieties*.—Alonzo, Ajax, Beatrice, Beauty of Montpellier, Colonel of the Buffs, Constance, Gannymede, Incomparable, Magnet, Purple Standard, Prince of Orange, Pulehra, Plantagenet, Rowena, Rosa, and Virgin Queen—16. If you do not mind price, add Optimum. *Small or Fancy Varieties*.—Ambassador, Beauté, Caliban, Celestial, Delicatum, Empress, Hero of Surrey, and Formosissimum. Your *Cinerarias* are all good varieties; you may add to them with advantage—Amy Robsart, David Copperfield, Star of Peckham, Lady Hume Campbell, Mrs. Sidney Herbert, Marianne, Tyrian Prince, Rosy Morn, and Flora Macdonald. Your *Double Tree Paeony*, with 130 blooms upon it, is an extraordinary specimen; we never heard of so fine an one. The genus *Lycopodium* was accidentally omitted in our Dictionary.

DISEASED FOWLS (*B.*).—The questions are answered in Mr. Tegetmeier's communications in our last number (p. 246).

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WEEKLY CALENDAR.

M D	W D	JUNE 30—JULY 6, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
30	Th	Lechean; woods.	29.937—29.844	71—47	S.W.	—	48	18	0 45	24	3 16	181
1	F	High-brown Fritillary.	30.107—29.995	72—52	S.W.	—	111	VIII	1 m 0	25	3 27	182
2	S	White C.; wood sides.	30.131—30.099	73—50	S.W.	—	50	18	1 20	26	3 39	183
3	SUN	SUNDAY AFTER TRINITY.	30.158—30.177	80—51	S.	—	50	17	1 42	27	3 50	184
4	M	Marbled White; woods.	30.077—29.943	94—51	S.	—	51	17	2 10	28	4 1	185
5	Tu	Wall Moth; moist lanes.	29.912—29.819	97—60	S.	—	52	16	2 46	29	4 12	186
6	W	Chalk-hill Blue; chalk cl.	29.865—29.808	90—61	E.	—	53	16	sets.	30	4 22	187

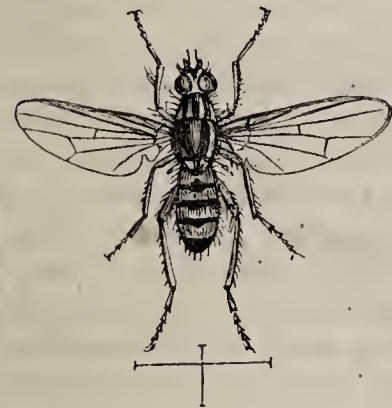
METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 74.8° and 53° respectively. The greatest heat, 95°, occurred on the 5th in 1846; and the lowest cold, 37°, on the 30th in 1837. During the period 113 days were fine, and on 69 rain fell.

THE LETTUCE SAW-FLY.

MR. CURTIS, in writing upon this insect, and in allusion to the close resemblance the female bears to the females of two other species, raises the justly admonitory suggestion—"this fact shows how extremely careful we must be in studying the economy of insects, not to take for granted that things are the same, because they bear a strong resemblance to each other." This is a lesson worthy of being borne upon the memory by the student in each and all of the departments of science, for it is a propensity of the human mind to confound similarity with identity, or, as Sir Walter Scott has written—

“————— So each mortal deems,
Of that which is, from that which seems.”

A propensity—an induction—which has led to more error from the days of the Alchymists, until the present day, than any other path of fallacy.



Although the parents of the three species so closely resemble each other, yet the habits of their young, or larvæ, vary essentially. That of the Lettuce Fly feeding upon the seeds of that vegetable, whilst the larvæ of the Cabbage and Turnip Saw-flies feed upon their roots.

Of the Lettuce Saw-fly (*Anthomyia lactuca*), we have the following particulars from the pen of Mr. Curtis, in the *Gardeners' Chronicle* for 1841:

—“The larvæ first make their appearance in August, but

they are abundant in September; they closely resemble those from the Cabbage and Turnip, being of a yellowish white colour, tapering towards the head, which is pointed, and armed with two short, black claws at the nose.

“These maggots live in the involucra of different varieties of Lettuce, feeding upon the grains and receptacle; and when these are consumed they wriggle themselves out backward, either to enter another seed-vessel, or fall to the ground and become pupæ.

“When the seed-stems are gathered and dying, the larvæ change to pupæ, called shucks, in Surrey, being bright chestnut-coloured, oval cases, which are rough when viewed under a lens, with two minute tubercles at the head, and two hooks and a few other tubercles at the tail.

“In the second week of May a few of the pupæ hatch; they have, however, been observed as early as April, and as late as July. The male is intense black, clothed with short hair and bristles; the eyes reddish-brown, and meeting above; face inclining to chestnut colour, with a bright spot of the same on the crown; the fore part of the trunk bears four varying whitish stripes; the body is ashy grey, the segments blackish, at the base a deep black; wings two, stained with black, and beautifully iridescent; the base and poisers ochreous, the nervures of the wings pitchy.

“The female is entirely ashy grey, and less bristly; the eyes not meeting on the crown, with a bright chestnut-coloured stripe between them; body oval, the apex cone-shaped; horns and legs blackish; wings and nervures lighter than in the male, which it equals in size.”

Like most insect pests their visits are as uncertain as the seasons upon which their emergence into life so much depends. Thus in the years 1836-7-8 and 9, the larvæ were most destructive of the Lettuce seed in the county of Suffolk. In 1849, they were equally devastating in some of the southern counties; but we have not since heard of their appearance extensively. In the present year, hitherto, all insects have been scarce.

No truth in Political Statics is more clearly established than that wherever a love of gardening prevails among a population, there also prevail comfort, virtuous habits, and little of evil. This is no mere assertion of hope, but is the verdict given by those who have devoted themselves to the study of such questions; and it is sustained not only by the evidence of every benighted clergyman watching over the habits of his flock, but by the personal experience of every one who reads these pages. No one, in town or country, who has noticed the pursuits and the condition of his neighbours, whether wealthy or poor, but can testify that regular habits and respectability of character are the invariable accompaniments of attachment to the culture of the garden plot.

To promote this love of gardening; to provide every house, down to the lowliest cottage, with a surface requiring the use of the spade and the hoe, is the duty of

every government, and every member of a state. Nor is this duty one of difficult performance, for it is only aiding to strengthen a taste and an inclination implanted in every household—indeed, we might say, in every member of a household—and which the most adverse circumstances cannot entirely destroy. A few weeks ago, our excellent Covent Garden reporter related an instance of a garden established on the deck of a barge that floats with freight up and down the river Thames. Go into the most dismal alleys and courts of a town, and we see from the basement to the attic symptoms of the love of plant culture—a Primrose in a cracked teapot, and a Geranium in a blacking-bottle. Nor does this taste depend upon or vary with age. In Manchester and Spitalfields you find the oldest weavers still pursuing the cultivation of Gooseberries and Auriculas, when both hands are upon the crutch, and one foot is over the grave.

If we turn to the mere children of a household, where can be found a more untiring source of pleasure than the few square yards which can be dug and exhibited as "My Garden?" In manufactories it is the same—the boys and girls there linger for such leisure-hour employment as much as our stabled animals linger for green pasturage in the spring. Very recently, we published the statement of Mr. Wilson, at Price's Candle Manufactory, that "almost all the boys set to work most eagerly at the gardens;" and we have testimony equally strong from the north and west of England, that, "wherever encouraged, good gardening prevails among the youths employed in the factories."

This brings us to conclude with a recommendation that gardening be rendered more generally a branch of education. We know, from evidence admitting of no dispute, the great benefits arising from such a course of proceeding. We have had the Industrial Schools at Redhill and Sydenham inspected, and find there testimony which we shall, ere long, publish. The proprietors of this Journal have annually offered a small prize to be awarded to the cultivator of the best kept garden at the Winchester Diocesan Training School, and it is always difficult to determine which of its pupils best merits the award. This year the judge reports seven to be equally deserving. Even in the Ragged Schools, employment in gardening has been found most beneficial, and we need quote no other authority on this point than the son of Dr. Guthrie, the philanthropic promoter of these schools in Scotland. The following is an extract from his letter:—

"You ask about our newly-projected addition to the Ragged School machinery. I am really sorry that I cannot give you any detailed or proper account farther than that the Directors, encouraged by the attempts which had been made in the same direction at Perth, &c., in this country, but especially at *Mettray*, in France (if you could lay hold of any little account of *Mettray*, you would be exceedingly interested), wish to try and establish something in the shape of a *small farm*, or market garden, of fifty acres or so, within a few miles from Edinburgh, where the boys of the Ragged School should be taught the use of the spade, &c., and, in fact, work the farm, under the charge and direction of a properly-qualified superintendent or superintendents. The produce would be sold; and it is expected that, besides the great advantages attending such a plan, with respect to the health, occupation, and useful instruction of the poor children (which, of course, is the end in view), the sale of the produce would ultimately not only support the farm, but be profitable to the Institution itself. It is expected that an outlay of no less than £3000 will be requisite for the purchase of the ground, the stocking of the farm, and setting the whole in working order. This looks a large sum, but my father has sanguine hopes they will reach it. Already they have got several hundreds of pounds, in the way of private subscriptions; but they are depending chiefly on the success of a fancy sale, which is proposed to be held in the Music Hall of Edinburgh, next Christmas, for the benefit of this scheme of an industrial farm in connection with our Ragged Schools. Arrangements are being made with a view to this; and I earnestly trust, and really think (from the popularity of the object) that it will be successful. The Directors have procured the names of a great many ladies of distinction as patronesses of the bazaar; so long a list, indeed, that it is more like a modified peerage roll than anything else. And, what is not always the case in such matters, many of these ladies give not only their names, but promise actively to exert themselves in procuring work and subscriptions for the cause."

Such testimony justifies us in urging the affording greater facilities in obtaining gardens, and the adoption of instruction in gardening as a more general department of school instruction. Such gardens, and such education, should be part and parcel of every Workhouse Union throughout the land.

IN the prize-list of the *Amateur Poultry Society of Dublin* for their Exhibition, to be held on the 6th, 7th, and 8th of December next, we notice several deviations from the usual classification on such occasions. Fowls are there divided generally into two classes—those with combs, and those with crests; the latter section, we presume, including all those varieties which, in England, have been shown as Polish. From the mention of the Black-crested White Fowl, we imagine that Irish fanciers have been more successful in their attempts to reproduce that great desideratum of the poultry-yard—a Polish fowl, with a really good black top-knot—than we have been in this country. It does not, however, seem quite clear as to what is meant by "the White-crested Red Fowl;" the Golden Poland, which would come nearest to this description, rarely, if ever, possessing a perfectly white crest. The arrangement of Shanghaes, as "dark colours," comprehending black, grouse, or partridge; "light colours," lemon, buff, and cinnamon, with a separate class for the white birds, seems better designed for the fair exhibition of this family than any previous system, since, although the black birds, from their more than questionable position as distinct varieties, are not, in our opinion, deserving of a class to themselves, they should not be altogether excluded from competition. "Persian," otherwise "Tail-less," and the "Frizzled," have each their prizes; but might not these, with the Silk and Negro fowls, with some few other similar families, curious, no doubt, but, without pretensions to be regarded in an economical point of view, have been done full justice to in a single class, such as has been assigned them at Birmingham and elsewhere?

Practical utility should always be the aim of all associations for the improvement of our breeds of poultry; and however form and colour may be required in the Shanghaes, Dorkings, Hamburgs, and Polish, they are only in addition to the strictly economical merits of those several races.

Feathered Bantams are on the list; and Class 18 is for the "Cuckoo" fowl, with single comb. This distinctive term having reference, in England, to *plumage* only, a Cuckoo Dorking, a Cuckoo Game fowl, or a Cuckoo Barn-door fowl, might all enter the lists; we think, therefore, that it should have been clearly stated what particular race was thus invited to compete, for hardly, we should suppose, are they all to appear as candidates for this prize. In Ireland, however, the term "Cuckoo" may possibly be so defined as to obviate this apparent difficulty, and may refer to some one distinct breed of fowls, with other characteristics beyond mere plumage.

By "*Roan*" ducks, those usually called "*Rouen*" are, probably, meant; but the class that generally appears for "ducks of any other breed" is here omitted; and when we consider that the distinctive points of the Rouen duck are so little at variance with the stock produced by well-selected varieties of the common duck of the farm-yard, aided by good management and liberal feeding, we certainly think that the two might well be arranged together. Unless colour can be proved as a necessary indication of the purity of any breed or variety of poultry, we would not reject birds that failed in this respect only, though superior in weight and form, the primary objects to be looked for in this family. Few, at any rate, will question the wisdom of the Dublin Society in banishing from their lists the ugly and coarse-flavoured *Museovy* ducks.

However easy the task of distinguishing between birds of the year and their seniors, we do not envy the obligation here imposed upon the judges of deciding as to the exact age, when two and three-year-old fowls are separately arranged. Chickens were formerly exhibited at Birmingham in pens of six, without reference to sex; but the alteration to a cockerel and three pullets was judicious in many ways, besides obviating the constant conflicts, and consequent damage, that resulted from the presence, in the same pen, of more than one male bird.

The variations we have noticed from the ordinary form of our English prize-list are here simply placed before our readers, with no desire to pronounce an unfavourable opinion upon them, but that, so far as lies in our power, uniformity of practice may be attained as regards the nomenclature and classification of the various members of our poultry-yards; and that the reasons on which the Dublin, or any other similar Association may happen to differ from the ordinary custom, may be fairly understood, and impartially considered.

At this season of Agricultural and Horticultural Shows, it is with very considerable interest that we have read of a similar celebration in the kingdom of Hayti. This, as our readers are aware, is a nation of negroes; and it is not without some feeling of shame, that we find that they make the service of God, and seeking for a blessing on their labours, a portion of their day's celebration. There are portions of their solemnity which Protestants would well amend, but we must not take offence at the Haytians acting according to the light which has been afforded them.

The *Moniteur Haitien* of the 7th May—Soulouque's official journal—gives a full account of the great agricultural *fête*, celebrated at Port au Prince, on the first of May. We translate it for the edification of such as have still doubts with respect to the growing greatness and prosperity of the black empire of Hayti.

According to the programme of the *fête*, at sunset on Saturday, April 30, Fort Alexander announced the solemnities by a salvo of twenty-one guns, which it repeated at sunrise next day. On Sunday, May 1, the call for assembling was sounded at 4 o'clock in the morning. At 6 o'clock the Imperial Guard and the troops of the garrison took up

their position in line of battle order, on the Place Petion. The imperial corps of artillery was stationed at the western extremity of Palace-street. At 6½ o'clock, the Governor of the capital directed the resident agriculturists to the Place Petion, accompanied by the officers of the rural police, and they took up their places before the altar of the country.

At 7½ o'clock the constituted bodies, the consul and functionaries assembled at the imperial palace. At 7¾ the imperial princes and ministers proceeded to the Place Petion, with a considerable *cortège*. The altar of the country was occupied by the imperial princes the Minister of Finance and Commerce, the Minister of the Interior and Agriculture, the grand marshals of the empire, the Presidents of Senate and of the Chamber, and the members of the Council of Notables.

Monsieur LAVELANT, President of the Council of Notables, pronounced the following discourse:—

"Citizen Agriculturists,—We celebrate to-day one of the first and most beautiful *fêtes* of the empire. In consecrating an anniversary to agriculture, the government renders a great honor to that profession. It is, indeed, among all professions the first; it constitutes the most extensive and most assured substance of the wealth of the State; it is from agriculture, therefore, that Hayti must expect the principal source of her happiness and prosperity. Work in it, therefore, fellow citizens, with ardour; you will thus assure your own happiness, that of your children and families; the happiness of society; the happiness of the country. Toil with assiduity; it is toil that procures wealth and peace, under whose shade liberty and independence are enjoyed. It is toil, indeed, which elevates man to true greatness. Crowns are about being distributed to the most laborious among you, that they may be an encouragement for those who will have deserved them, and an emulation for all."

Vive l'agriculture.

Vive l'empire.

Vive la liberté.

Vive l'indépendance.

Vive his Majesty the Emperor.

Vive the Empress.

Vive the Imperial family.

His Grace the Duke de la BANDE-DU-NORD, Minister of the Interior and of Agriculture, next addressed the farmers in these words:—

"We have just heard the Director of the Council of Notables. I shall have little to say to you. The *fête* which we to-day celebrate has been instituted by the constitution of the empire, in the design of honouring toil, of encouraging agriculture, which is the source of national prosperity; thus the crowns and agricultural implements, which the most meritorious among you are about to receive, form a real recompense which every one ought to value highly, because the government wishes that their rewards be only given to those who manage their fields and enclosures properly—to those only who produce much by their assiduity in cultivating their gardens. You will understand, it is a means of provoking emulation. Let you, who are about to obtain the recompense, render yourselves ever worthy of it. Let you, who see it distributed, act so as to deserve it next year in your turn, by showing yourselves more industrious. Toil, my dear fellow citizens, distinguishes man, assures his well being and the future of his family. It is toil which makes the glory and prosperity of nations. His Majesty, the Emperor, who desires the happiness of his subjects, asks you, therefore, to give yourselves up to it with ardour, employ your time well, and this good employment will prove of great advantage to your harvests, and make satisfaction grow up about your hearths. God having favoured you, we ought to go to his temple after the distribution which is going to be made, to render thanks to him, and to pray him to continue to shed his holy blessing on your toils, so that they may be developed, and become more productive this year. And as nothing is obtained save with the aid of peace, we will ask him to strengthen that which we now enjoy under the paternal government of his Majesty the Emperor."

Vive la constitution!

Vive l'agriculture!

Vive l'Empereur!

Vive l'Empress!

Vive the Imperial family.

After this speech, and while the farmers who had been the most industrious were being crowned on the altar of the country, the imperial artillery discharged a salvo of twenty-one guns. The troops of the line and the imperial guard then went to take up their positions on the church square, and the imperial artillery occupied the esplanade of the Intendance. The cortege left the Place Petion for the church in the following order:—

The agriculturists, carrying cane stalks and branches of the coffee-tree.

A picket of horse grenadiers of his Majesty's guard.

Band of the infantry of the guard.

Pupils of the government schools, accompanied by their directors and professors.

Members of Commerce.

The ministerial officers of the imperial court, and of the court of Cassation.

Staff officers, and those unattached.

Officers of the imperial navy, and of the port.

Health officers.

Justice of Peace and his deputies.

Employes of the different public administrations, and their heads of bureaux.

Employes of the ministers.

The Council of Notables.

The Council of the District.

The Central Commissioner of Public Instruction.

The principal officers of finance, and of the other branches of the public administration; the editor of the *Moniteur*,

and of the acts of government; the General

Secretaries of the Ministers, and the

Secretary of the Council of Ministers.

The members of the Imperial Court, and the officers of the bar.

The Court of Accounts.

The Treasurer General.

The Court of Cassation, the Procureur-General and his deputy.

The brigadiers of the army.

The Field Marshals.

The Lieutenant Generals.

The princes and the marshals.

The Representatives and the Senators.

The consuls of foreign powers.

The Grand Marshal of the Palace, and the Grand

Master of the Ceremonies.

The Imperial Princes.

The Ministers.

The Grand Pantler.

The High Groom.

His Majesty's Staff Major.

A picket of light chasseurs of the guard closed the march.

When the cortege reached the church, the masters of the ceremonies pointed out their places to each. The resident agriculturists occupied the right aisle of the church. The religious ceremony was celebrated with great pomp by the Grand Chaplain of the Emperor and Vicar General. At the consecration, and at the *Te Deum*, a salvo of twenty-one guns was discharged by the imperial artillery. After mass, a grand banquet, prepared in the hall of the Council of Notables, reunited all the agriculturists. In the evening the city was illuminated.

THE opinion we have maintained that first-rate *Shang-hae Fowls* still maintain the high value they have attained, is fully supported by the results of the sale at Mr. Stevens's on the 21st instant. Lot 22, Captain Snell, of Norwood's, buff cockerel, hatched February 4, 1853, "winner of the first prizes at Cheltenham and Plymouth," sold for £15. Lots 23 and 24, buff pullets, of same age, and winners of the same prizes, sold respectively for £22 1s. and £14 14s. Nine other lots, all

chickens, sold for sums varying between £2 and £9 9s.; some of those hatched as late as March the 1st realising the highest prices. These were all actual sales. Mr. Gilbert's lots were knocked down at prices varying between £2 and £12 12s., but some of them were bought in. Altogether there were 166 lots, some of them very bad, and the total sum of the sales was £430.

GLEANINGS.

THE Prize Essay, for 1852, of the Entomological Society, is *On the Duration of Life in the Queen, Drone, and Worker, of the Honey Bee*. The author is J. G. Desborough, Esq., and he has been a keeper and student of this domesticated insect for thirteen years. We, therefore, opened the pages of his essay with an expectation that he had determined the unsettled question—What is the life-time of a bee? and we confess our disappointment to find that he has left it still without an answer. Thus, on the duration of life in the *Queen Bee*, he says at p. 14, "although it may be deemed too presumptuous to assert that her age is in reality three or four years, yet the facts adduced from personal observation, and the deductions and conclusions drawn therefrom, will be deemed a sufficient apology by the writer in thus stating his belief that his opinion is correct." Of the *Drone*, he observes (p. 17), "we shall not be assuming too much in concluding that the natural duration of life in the drone is the same as in the worker bee;" and in a succeeding portion of the work (p. 21), he says, "we have demonstrated that the life of the *Worker Bee* does not exceed eight months, yet we have not shown that it reaches that period." We have read and re-read Mr. Desborough's statements, but we confess our inability to discern the demonstration. There are ingenious calculations and deductions, but if the conclusions are admitted to be probabilities, they have applied to them the highest authoritative epithet to which they are entitled.

As it is so easy to catch the queen bee, we see no great difficulty in having her marked with a streak of white paint across her wings; and it would be no very toilsome job to an apiarian to serve a hundred bees similarly. If some twenty apiarians would do the same; and if the results of their observations as to the times when the marked bees ceased to appear coincided, then we should say that the results might be accepted as demonstrations.

Though we consider that Mr. Desborough has not determined the age to which any of the three ranks of bees attain, yet his pamphlet is most candidly written, and we are enabled to hesitate from agreeing with him, because he has fairly stated the grounds on which his deductions are based. Nor is the usefulness of the Essay circumscribed by being confined exclusively to a consideration of the bee's age. There is much that is amusing, much that is instructive, and much that is suggestive in its pages. Among the latter is all that he says relative to returning swarms, instead of hiving them. We have had our attention specially drawn to

this by Mr. H. Taylor, who says,—“The concluding part contains, I think, a very important suggestion, which, as the swarming season is so fast passing away, I lose no time in calling attention to in *THE COTTAGE GARDENER*, in the hope that some of your readers may have an opportunity at once of testing the principle, and informing us of the result. Mr. D. evidently courts publicity as to his discovery, and therefore I do not wait for consent to make the following extract. The preliminary process, when it is desired to extract the queen from a recent swarm, is well known; but I give it in Mr. D.'s own words, to make the whole question understood:”—

“In the swarming season let the apiarian consider well and determine his intentions and wishes respecting the future number of his stocks. In case he does not wish to increase the number of his stocks, when a swarm rises let it be returned; then let him watch carefully the proceedings of the hive or stock for the next nine or ten days. If young queens are brought out dead, exceeding three or four, he may be quite certain the stock will not cast; if the stock commences honey gathering with energy, he may also rest satisfied that it will not cast. Should, however, the bees be determined to follow their natural course, and east, they must be returned again and again, until the whole of the young queens are disposed of, when the stock will quietly settle down, and the apiarian may look forward to his honey harvest. He will by this means have the increase of his stocks entirely at command; he will have the benefit of the labours of his surplus population; and if quality and fineness of honey is his aim, he can by no other means secure his object so certainly and safely as by returning his swarms, because in a stock when the swarm has been returned, no fear need be entertained of the queen depositing eggs in the glasses or boxes intended for surplus honey, and therefore extreme purity of the honey as well as whiteness of the comb is attained.

“This process of returning is an exceedingly simple one, and certain of success: the bees are hived in an ordinary straw hive, and when they are settled (probably about twenty minutes after being taken), they should be dashed out on a white cloth by suddenly striking the hive mouth downwards on the cloth—the sharper the stroke the better; the hive should immediately be lifted up, and the bees will be seen in a confused lump on the cloth; *they will not rise or take wing*, but will spread themselves on the cloth. The queen must now be watched for diligently; when seen, she should be covered with a wine-glass, then slip under the glass a card or a piece of zinc, and care taken that she does not escape; she must be removed and killed. The bees may then be left to themselves, and they will, when they miss the queen, take wing and return to the stock whence they issued; but what is better, the cloth may be taken up by the corners, laid on a board sloping towards the mouth of the hive, and a communication made between the bees of the swarm and the stock: as soon as this is done, the bees of the swarm will be as anxious to return as they were to come out of the hive, and the operation will be complete in less than half an hour.

“There is no danger in the operation whatever; we have performed it scores of times without covering of any kind, and without being once stung in completing it, and we are quite sure that any apiarian who has once seen the experiment carried out, and has noted the advantage to be derived therefrom, will be certain to adopt it. Plain practical directions may be given for performing the operation, but our strong advice to every one is, not to omit seeing it done by an experienced apiarian, if possible; more may be learned and more confidence gained in seeing once, than in reading a dozen times. We have practised this system entirely for the last six years, and during that time have never had occasion once to resort to any expedient to reduce the stocks in our apiary: the extract from “my note book,” of the year 1847, given at pp 153 and 154, will show how far the increase of stocks was prevented in that year; from the number of queens killed, the probability is, that had not the system been persevered in, the stock, No. 4, would have

been split up into numerous colonies, and forty pounds of *honey in glass* would certainly not then have been obtained.

“We cannot better conclude this essay than by suggesting an experiment which occurred to us in the year 1851, but from the extraordinary circumstance of our not having a single swarm in our apiary in 1852, it was impossible for us to carry out; and in thus making it known, we may probably induce some of our apiarian friends to try the plan, and thereby it may the sooner be established as successful, or not, and the benefit, if successful, may be the sooner promulgated; in doing this, we feel we are not overstepping the bounds of this essay, inasmuch as the experiment bears practically on the prevention of the increase of stocks. In the year 1851, by accident, the bees of a swarm were returned to a hive to which they did not originally belong; that hive had been previously not much inclined to work (it is true, the population was not over large); immediately the bees of the swarm had joined this hive, the whole population commenced working vigorously, and produced in the season a fair proportion of honey; the stock from whence the swarm issued was a strong one, and although it did not produce as much honey as it would have done had the bees of the swarm been returned to it, yet it gathered strength and produced three glasses of honey, one being thirteen pounds in weight.

“Now it occurred to us, that as the accession of the quantity of strange bees to the lazy hive immediately induced work, that it would be prudent, instead of returning the bees of a swarm to the stock from whence the swarm issued, to join them to another hive (if the queen be taken away, any hive will readily receive them); and the next swarm which issued from any other hive might be joined to the first hive which had thus lost its swarm, and so on, keeping up a continuous change of the quarters of the bees when they swarm.

“We have always observed, that, after returning a swarm to the stock to which it originally belonged, such stock does not generally set to work steadily until after the lapse of four or five days; and we argue the reason to be this,—when the bees are returned, they find their own hive in precisely the same state as when they left it, and there is therefore no inducement to work, in fact the bees are disappointed; but if these bees are joined to a hive where a different state of things exist, then that they are instigated to pursue their natural labours and gather honey. This is merely the idea of the writer; but the accidental experiment having succeeded so well, he has ventured to mention it, at the same time explaining that he has not yet had the opportunity of testing its invariable success.”

COVENT GARDEN.

It may be said there is now a plentiful supply of everything in the market, and the demand is quite equal to the supply. *Green Peas* are so general as to be bought retail at from 8d. to 1s. per peck; they are very good, and yield well. *New Potatoes* are rapidly displacing the old, some sorts of which are now all but unsaleable. The new are making about 12s. 6d. per cwt., but some samples of superior quality realise from 18s. to 20s.; they are very fine. *Cauliflowers*, of excellent quality, make from 2s. to 3s. per dozen. *Cabbages*, 9d. to 1s. 6d. per dozen. *Rhubarb*, 2s. to 2s. 6d. per dozen bundles. *Asparagus*, 1s. 6d. to 3s. 6d. per 100. *Cucumbers* (fine), 4d. to 1s. each. *New Carrots* are becoming plentiful, at 6d. and 9d. per bunch.

In *FRUITS* we have now a rather good supply of *Strawberries*, at 6d. 9d. and 1s. per pottle; they are principally British Queens, Keen's Seedlings, and Hooper's Seedlings, the latter a first-rate variety, early, and very prolific. *Cherries*, of foreign growth, are now plentiful, at from 9d. to 1s. per lb.; but they are not sufficiently ripe—acid, and hardly even fit for baking.

However well our continental neighbours may supply us with other articles, they cannot satisfy us with fruits of such tender substance as these. *Grapes* are very fine, at from 5s. to 10s. per lb. *Peaches* and *Nectarines*, 12s. to 18s. per dozen.

Of *FLOWERS* there is an abundance, both in pots and cut for bouquets. The former consist of *Scarlet Geraniums*, *Sweet Peas*, *Fuchsias*, *Verbenas*, *Hydrangeas* as large as the crown of a hat, *Pinks* of the Anne Boleyn variety, *Yellow Noisette Roses*, and *Cape Heaths* of the most choice description. We must not omit to mention the little *Musk Plant*, a favourite with every lady who has a window, whether it be in a drawing-room, an attic, or a cellar. It is, in fact, the poor man's summer pet. It may not be generally known, that a great, if not the greater, proportion of the Musk plants that are sold on the costermongers' trucks in the streets are produced by the old pensioners of Chelsea Hospital. There are a certain number of these old worthies who have garden allotments, which they hold during "the term of their natural life;" and of late years they have found it to be a business speculation of such a remunerative kind that most of their gardens are devoted to the cultivation of this plant for sale. If any of our country friends have time to spare during their summer visit to London, and are disposed to avail themselves of the treat, they may have an opportunity of seeing the old warriors thus employed. H.

HORTICULTURAL SOCIETY'S GARDEN AND FETE.—11TH JUNE.

I HAVE never been so convinced, as on the present occasion, that seedlings, which are exhibited for the first time at a great show like this, are ushered into the world under serious disadvantages. No one cares to look at small plants in little pots on such occasions, however nice the flowers may be, or how much soever they may be improvements on the old kinds, except, perhaps, some few gardeners and dealers, who may be personally interested in seedlings. I recollect the time, however, when ladies used to crowd the seedling tents, and note down the names of the best seedlings, but that was when the Messrs. Garth, Foster, and Beck, produced novelties, and Mr. Hoyle got his head up through "*Mount Etna*,"* without an eruption; but these days are gone, and we cannot be improving for ever in the same strains, that is quite certain. Twenty *Basilisks*, as many *Princes of Orange*, and double the number of *Magnets*, will not, and cannot, raise that class of old favourites one more degree in public estimation; and it does not appear that if the names of all the ladies in the peerage were transferred to fancy geraniums, that they either can be pushed much farther for general attraction in a show. New mines must also be searched for seedlings in other classes of popular flowers. No florist has yet subdued *Sidonia*, but *Sidonia* is now a grandmother in the hands of a scientific cross-breeder, and a new strain is very likely to be brought into existence through her. The grand-daughter has been shown to me, and her very looks encourage me to urge on young ardent minds, at this particular season, in all sorts of experimental crossing, otherwise our shows will come to the finish sooner than they ought.

* It is understood that Hoyle's *Mount Etna* Pelargonium was bought for £50.

I was reminded of a prophecy of 1847, on seeing *Epiphyllum* (Cactus) *crenatum* in flower in a fine collection of tall *Cacti*, by Mr. Green, which was then said would change the whole face of the showy Cactuses in seven years; and, if this prophecy turns out to be true, those who live to see next summer's shows will see something worth going to see. As it is, the best seedling Cactus that has appeared, since *Conway's Giant*, was at this show, and a very pretty Cactus it is, but, having had only a flower or two on, no one seemed to care anything about it. Let me advise, however, such of my readers as admire these gorgeous flowers to make a memorandum of it; it is called *Epiphyllum coccineum*—not a descriptive name, certainly, but no matter. The flower is most beautiful, and was exhibited by a Mr. Pamplin, and, I believe, a nurseryman at Hornsey, near London. There was a cut flower of another seedling Cactus called *Brayii*, or some such name. No wonder that these Cactuses move so slow, when we consider that the seeds of most of them take ten, eleven, or twelve months to ripen, and that the seedlings take from five to fifteen years in proving them. I had a cross-seedling Cactus myself that was thirteen years old before it flowered, but I believe an amateur could flower the plant in half the time. Early readers of *THE COTTAGE GARDENER* will recollect the anecdote about Jenny Lind visiting the nurseryman who furnished her flowers, in his last illness; his widow, Mrs. Conway, Earl's Court, Brompton, had a beautiful pink seedling Rhododendron exhibited here, called *Lady Bridport*, which is well worth having when it comes out. The new Tree Lily, from India (*Lilium giganteum*), was here again from Mr. Veitch, of the Exotic Nursery, King's Road, but not the same plant as was shown in May last.

FRUIT.—I never saw the Peaches, Nectarines, and Grapes, in better order, particularly the Grapes; and the Strawberries in pots were better than were ever exhibited at Chiswick before; and although everybody was amazed at one dish of *British Queen* Strawberries, by the same grower, Mr. Smith, of Twickenham, I can say, in truth, that my next-door neighbour, Mr. Jackson, had lots and lots of just as good this very spring from his forcing ground at Hampton Court. Some one, but I missed the name, has at last shown ripe Grapes in pots, with the leaves in perfect health; and if they could always be brought out so, they would not make such unfavourable impressions on people who expect to see everything at a first-rate Show in first-rate condition. I was particularly pleased to see Suffolk coming out at last so effectually on the London boards. Nothing so bold has come up from hence, since Margaret Catchpoll rode the stolen horse, as Mr. Peto's *Muscat Grapes*; they astonished the Londoners. I know Mr. Bradley, who grew those Grapes; and we all know Mr. Peto, who put down the first fifty thousand pounds to set the Crystal Palace in the air in 1851; and between the two, and Suffolk to the bargain, these Londoners need to look to their laurels. There was a new-looking, round Melon, called *Golden Queen*, which had the second prize for flavour, and I notice it for giving a variety in that dish in first-rate desserts. It is customary, in all large places, for the gardener to see all his fruit dished, and to help in the work, and also to place it, or see it placed, on the side tables; and of all the fruits he has to deal with, Melons are the most monotonous; but this *Golden Queen*, *Fleming's Hybrid*, and the *Old Egyptian Green Flesh*, will make three good changes with well-flavoured Melons—that is, three night's dessert, and it is not fashionable for visiting parties to remain longer than three nights, neither is it fashionable to eat a Melon at all at a first-rate party, only it must be there, and if there should be a mortal round the table who has the misfortune of being a good judge of fruits, he must taste, and all the rest are satisfied with his verdict,

without judging for themselves. This *Golden Queen* was from Mr. Robertson, gardener to Lady Emily Foley, at Stoke Edith Park, where I have spent some pleasant days, in Herefordshire. There were also Oranges, Lemons, Citrons (a fine dessert dish when preserved), with *Gamboge*, *Rose Apple*, and *Vanilla*, from Sion House. *Pink Apples* were not so good as we had them in the winter; the *Noblesse* and *Royal George* were the chief Peaches; and the *Elruge* and *Violette Hative*, the chief Nectarines, and they were wonderfully well coloured.

LARGE CONSERVATORY.—One of the finest plants in the large conservatory of the Horticultural Society is the Norfolk Island Pine (*Araucaria excelsa*). The top of this fine tree reached the glass, and had to be cut back some time ago; and soon after that a new leader started up as if nothing had happened, a very rare thing indeed among Conifers; now there are three or four more leaders started from the broken-off part, but quite small as compared to the first one; and when I say that each of these secondary leaders might be cut off, made into cuttings, that the cuttings will root in the hands of a good propagator, and that plants so raised are just as good, and as likely to make handsome trees as seedlings from native seeds, I affirm more than half the gardeners in the country are aware of. Indeed, there is no more reason for this, the handsomest and the most valuable tree, in some of our colonies, among all the conifer tribes, being either scarce or dear, or difficult to get in abundance. There are some propagators who would strike it with as few losses as a pot of *Verbena* cuttings, the only difference would be in the time. There is a proof, in this house, that breaking off the leader of the tree does not hurt it in the least; but suppose a good stock plant of it in a large pot, turned into the stove early in March on purpose for propagation; as soon as growth is begun whip off the first cutting by taking the very top; if you could now apply a slight bottom-heat, there would be three or four more cuttings ready to take before the end of April, and in taking them, the best way would be to cut off that part from which they issued along with them, leaving a part of the stump full of fresh eyes or buds, which, in their turn, would sooner start under the stimulus than any buds that might yet be unstarted on the upper portion, and this might go on all the season, and a constant supply of the best kinds of cuttings be at command, from a single plant only, and that plant, too, even if stumped down to within a few inches of the pot, has only to be allowed to carry one shoot, and it will soon run up, form a tree, and be as healthy as ever in a year or two.

The white and the red *Daturas* were in magnificent bloom in this house, which seems to suit them and the *Acaia* perfectly; and some of the original Tea-scented *Roses*, that were planted when this house was first filled, are yet very good. I noticed *Munsais* and *Gaubault* as very fair, notwithstanding the murderous attacks of the roots of the huge monsters which overshadow them; and the beautiful *Luculia gratissima* is now suffering severely from the same cause, and although it may go on flowering for a few more years, it is past the art of man to make a fine looking plant of it as it is. But let me stick to the *Roses*, if only to say, that after seeing how well the finer *Roses* did at first in this conservatory, and even some of them do now, under such disadvantages, because the house is raised on a terrace, four feet or more, above the general level of the garden—after seeing that, I say, it is very difficult to believe that the rose-growers who planned and planted the new rose-house for the society, did not do so purposely to befool them—I said as much the first moment I saw it, and now the proof is as evident as the “proof of the pudding.” The new rose-house is a dead and disgraceful failure, from no cause of the construction of

the house, or after-management of the plants, but solely and entirely from the stupid plan of sinking the beds below the level of the garden, on the one hand; and then forming these beds as steep as the roof of a house, so that no mortal could ever water one of them unless he first made a cup in the face of the bank to hold the water. I am quite vexed with this experiment. It was only a year or two before it was tried, that Mr. Fleming and myself proposed and discussed the subject of rose-houses, in general, for large establishments, in our private correspondence, and we had a ripe plan ready, the very reverse of that adopted by the rose-growers, to whom the Society good naturedly gave up their garden and their money, and now, instead of doing good, this single experiment will throw back the system six or seven years at the least, for where can you find a gentleman who will listen to the subject in print, or entertain a petition from his lady and his gardener, after seeing the failure in the Society's garden. When things are at the worst, they mend, according to the adage; but I question if the *Roses* in this house will ever mend, or be much better than they are; but how to arrange for a rose-house that would answer in any locality, is one of the simplest problems in garden contrivances—the same soil, the same wood and glass, and, probably, the same plants, might be so arranged on the very same spot they stand on, as to grow such *Roses* as none of us have ever yet dreamed of. I am as sure of that as I am of my own existence, and I would undertake to do it with my own hands, old as I am. I do not think it at all necessary that the bed in a rose-house, like that in this house, should be lower than the surrounding ground in any garden in Great Britain or Ireland. In the south of France and in Italy it might be necessary to do so, a little in some situations, on account of the dry, hot summers; on the contrary, the rose-bed to be covered with glass should be raised a little above the surrounding soil in the highest garden in the kingdom; but in the garden at Chiswick, on a dead level, very difficult to drain, and within a few feet of the tide mark, it would be an expensive job to make a rose-bed of this kind sufficiently high above the surface, and all such beds ought to be a dead level on the surface, and nothing else, so that a drop, or a glass full of water, would sink down into it just where it was intended.

GLASS WALLS.—I had not sufficient time to examine the specimen of this kind of shelter for half-hardy things, but the general impression among the craft is against them also; yet the Society was perfectly justified, and even liberal, to allow the experiment to be tested in their own garden, as well as that of the rose-house; and it is better that they allowed the rose-growers, who supplied the plants gratis, to have it all their own way; and although they made a mess of it, we are not bound to follow their plan. The failure will be a warning to all who may entertain the strange notion that *Roses*, like *Rose-bays* (*Rhododendrons*), will answer better if sunk beneath the surface in such a climate as ours.

All other parts of the garden looked better and fresher than I ever recollect to have seen it. The *Wistaria* was nearly over, and the original *Indigofera decora* was in flower-bud outside, with the bottom shoots turning quite woody, while in a pot inside it was full in bloom; everybody ought to grow this handsome, hardy plant, and a dry rockwork seems to suit it. The new Tree *Paonies* have made a large growth, and three kinds of them were in bloom, and quite different from the old ones. There was every appearance of a large crop of the different hardy fruits; and I was pleased to see that the Society continue to appreciate my own seedling *Geraniums* and *Petunias* for beds. I saw a new bedding *Geranium*, of the *Unique* breed, in one

of the greenhouses; the two back petals are as in *Unique*, the other three are more of a rose colour. There was a very nice *Berberis* in flower against the conservatory wall, called *Angulosa*, which ought to be better known; the flowers were in the same way, and nearly as elegant as those of *Berberis Darwinii*. Not far from it stood *Cratægus erenata*, loaded with snow-white blossoms; but the name need not frighten one from placing this among choice, nearly-hardy shrubs, as it does not grow stronger than a Myrtle. *Calycotome spinosa*, a yellow, Cytisus-looking shrub, was richly in bloom on the same wall; also *Ceanothus dentatus*, *rigidus*, and *papulosus*, all things of the first-water in their way. A Rose, called *Compte Robrinsky*, might be taken for a double *Gloire de Rosamene*, only not quite so high in colour. *Saffrano*, flowering in a dwarf, stunted form. *Adam*, a fine Rose, like the *Malmaison* Rose, was very beautiful. A bed of the *White Eschscholtzia* looked much better than I expected it would. *Aquilegia Californica* must be added to our list of best Columbines, purplish all over it; and *Aquilegia Skinnerii* would make a new strain by crossing. Beautiful specimens of the *Lady Mary Fox* Geranium, in the greenhouse, looking just as gay as any of the new sorts. The best variety of the shrubby *Calceolarias*, for beds, was in the large conservatory—large specimens in pots—it is the nearest to the one I had at Shrubland Park, called *Corymbosa*; and here I met with a species of Cactus (*Cereus*), from Honduras, new to me, with a rich, shining, deep crimson flower, with three rows of petals, or seeming to be in three rows, and nearly as large a flower as any of the old tall Cacti; it is a real good addition to this family of window plants.

D. BEATON.

SHADING AND AIR-GIVING.

Few things are more bewildering to young beginners in exotic plant cultivation than *shading*; and to amateurs, whose chief physical engagement is connected with attention to their plants only on mornings and evenings, there are few matters more marked by perplexing and uncheering disappointments. Gardeners, in large places, and men of business, with their pet single house, have often alike to complain of want of thought, in the case of their, no doubt, well-meaning coadjutors. Neglect of *giving air* early enough, and then a burst of it, after the house has been steamed up with sun-heat and vapour ever so high, will produce results, less or more analagous to pouring among pot plants a blast of hot air from a furnace, just in proportion to the difference in temperature and moisture inside and outside of the house. One of the best-known, and most successful gardeners of the day, told me, recently, of a splendid house of Grapes, the greater part of the bunches of which had been completely scorched from this cause alone. Air was neglected in a very bright day, and then a sudden rush admitted. He aptly said—if the house had been shaded, plenty of moisture thrown about on paths, stages, &c., and then only a very little air given, when the house began to cool, the mischief would have been avoided. As a preventive remedy for all cases, and especially applicable to gentlemen who are absent from home during the day, and cannot depend thoroughly upon shading, nothing is so effectual as never taking the whole of the air away, night or day; or, if for the sake of heat, it is removed at night, to be sure to give air at the back of the pit or house early in the morning. The heat of the house, from the power of the sun, thus increases *gradually*; there is no sudden accumulation of scalding vapour, and the strong constitution, from the low temperature at night, enables the plant to regale itself in a temperature at mid-day without any shade, which

would be destructive to one coddled up in a high temperature at night, or with air given at breakfast-time, after the sun has been playing on the glass for hours.

This early or continuous air-giving, is, therefore, to a great extent, a substitute for all the bother and litter of shading. We thus, likewise, in most cases, place the plants in the circumstances they would realise in their natural climates. This is a matter of importance to all our subscribers who follow gardening in large towns. The night and morning air is ever the freest from sooty exhalations. The more given then, the less will be required during the day. Instead of a difference of some five or ten degrees between the temperature of night and day, many of the plants we cultivate, enjoy, in their natural wilds, a difference of 30° or 40°.

I fully acted on this principle when I gardened in London many years ago. Even then I could do no great things with Geraniums, Epacris, &c., without shading from very bright sun, and a very free application from the syringe at all times, just saving the bloom as much as possible. But I found little difficulty, except my comparative ignorance, with any plants requiring heat—such as stove plants, cucumbers, melons, pines, vines, &c.; and these had seldom shading, except during sudden changes from dull to bright weather. During early spring, even in bright days, the air was not vastly increased, because it brought so much soot with it, but additional moisture was given to the atmosphere, and air was either left on all night, or given early in the morning. After shutting up early in an afternoon, I have often given a little air to the tops of all my sashes at bed-time, and increased that but little during the day, until the atmosphere of summer came. In a vinery, for instance, it was no uncommon thing to have a difference of 40° between the house at midnight, or an hour or two after, and the same house, with a bright sun, in March or April, at noon—the temperature ranging from 50° to 55° in the one case, and from 85° to 95° in the other. The fertility and luxuriance proved the treatment to be right. Such a difference taking place suddenly would have been ruinous with such a small amount of air and no shading: the air at night, or early in the morning, caused the temperature to increase *gradually*. The expanding and assimilating powers acted, therefore, in unison. No little money was also saved in fuel and shading-cloths.

These remarks will meet the case of several recent inquiries from town-gardening amateurs. In most towns of moderate extent any plants may be cultivated in summer, unless there are pestiferous fumes emitted from some neighbouring manufactory. But in the centre of such Babylons as London, or even of Manchester, Glasgow, &c., a vast deal of labour in washing, &c., will be requisite to keep during the year the denizens of the greenhouse. No one likes to cut away their own standing ground, and yet honesty compels me to say, that the plants that mostly come under my department of labour cannot be maintained in vigorous health, in such circumstances, without a great amount of care and labour, and hardly even then. The thick smoky fogs in winter, unless great care is taken in watering, will fill the stems with watery juices, the precursors of hosts of insects. If you open the sashes the plants will get a saline sooty incrustation. If you keep them shut, and shade in a bright day, the plants become weakly and drawn. Your chief remedies are—thin bunting, a fine gauze wire over the air apertures, to help to sift out the soot, and a free application of the sponge and syringe to the foliage. Where this labour is deemed too much, with the exception of Scarlet Geraniums, Fuchsias, Ssucculents, and a few others, which remain at rest during the winter, it will be the most satisfactory to have the place fresh furnished, or partly so, every spring.

This last mode, however, would lessen the pleasure of

having plants of one's own growing. For these there are two classes of plants peculiarly applicable. The first of these are hardy plants, chiefly of an herbaceous character, and requiring in winter similar protection as that afforded to alpine—namely, protection such as a covering of snow would render, which is well imitated by thick glass cases on the top of a house even, and, in severe weather, the benefit of a tarpaulin. For months during the cold season, no further care would be necessary than a little air in fine weather, to keep the atmosphere sweet, and prevent moulding and damping. If the pots are plunged, little of the water-can will be required from November to March. After that period more air would have to be given, and then, in April and May, the whole lot may be turned out-of-doors, unless there are a few very delicate and rare. The other class would suit those who can afford all the paraphernalia of a well-arranged plant stove. Were I, in fact, shut up to have one plant house, within three miles of St. Paul's, as large as I liked, and heated how I liked, and to grow what would succeed best and yield the most pleasure, I have a dim perception of drawing rather largely on the kindness and experience of Mr. Appleby—getting him to tell me the notch about this plant, the secret about that, the mode of surmounting the difficulties about a third, and ever so many more; and with labour, power, and money for a young stock, at command, we could, as respects stove plants, orchids, and ferns, venture a hint to him to look after his laurels, even amid the salubrious airs of Uxbridge, and just because, with such plants little air would be necessary, unless when the sky was clear, and because, by the use of abundance of moisture, shading would be reduced to a minimum, unless when a plant was commencing to grow, or when it was desirable to retain the bloom as long as possible. Of course, things that would only grow in the shade could have a shady part of the house for themselves.

A cool temperature at night, and early air-giving, will thus minimise shading, and so far as growing and ripening are concerned, would render the process next to unnecessary, could we depend upon regular courses of weather. But in all shallow structures, such as pits and frames, shading is often required, when, after several days of dull, cloudy weather, one with bright sunshine suddenly comes. We see even hardy plants flag for several hours, under such circumstances, and unless the preventives of early air-giving, and additional moisture in the atmosphere, have been attended to, the danger of scalding and burning would have been imminent, without shading, in all such structures.

A syringe over head, or an hour's shading, will often habituate the plants to the change, and no crumpling or scalding of leaves will be the result. But this shading should never remain a moment longer than is necessary. It is nothing uncommon to meet with people that can only have one prominent idea at one time. They will never do great things in gardening, unless they are fixed to one department, and hardly even then. It is nothing uncommon to see a man careful in shading; but go hours after the sun has been clouded, and there is still the shading. The necessity of removing, as well as putting on, is a sort of double idea, and that was too much for thorough attention. One of the cleverest men I ever knew, never held a situation long from this very cause. Whatever he was doing was done first-rate, because it received his undivided attention. There was no room for anything else, and the general results may be guessed at. There was praiseworthy attention to one object, but for all other things demanding equal care and thought, they might as well not have existed. Every minute's shading more than is necessary renders the plant more enervated, and just requiring more and more of future shading and coddling.

Having now said sufficient of the principle to be kept in view in shading, let me now say a few words as to the modes and material. For though the hints thrown out would reduce shading to a minimum when growth and maturation were concerned, it becomes less or more indispensable when we wish to preserve plants in bloom as long as possible.

For this purpose, nothing is better for houses than thin calico, or open bunting, fixed by one side to the ridge of a house, and at the front side of the house to a round roller of wood, from one-and-a-half to two-and-a-half inches in diameter. In houses about thirty feet in length, a cord twice the width of the house, wrapped round a grooved wheel on the end of the roller, will be sufficient to let the roller up and down. As you pull the string, the resistance given will cause the roller to revolve and mount the roof, and by means of a pin in front, it may be fixed at any elevation.

But even at the above length, or a little more, there will be a tendency in the roller and blind to drag at one end, and, therefore, in the cases of blinds over long houses, it is better to have two or three pulleys instead of one. The mode of working is quite as easy, but different. Each pulley will require to be from three to five times the width of the houses. Fix the blind on the apex of the roof and to the roller, respectively, as stated above. Then, supposing you are to have three pulleys, one near each end, and one in the middle, fix your pulley lines firmly in these places to the apex of the roof, then bring down the cord on the glass, underneath the shade, passing it over the wooden roller, and taking it back again to the apex, and passing it there through a pulley wheel, and bringing the end of the line down over the roof again, so that you can easily catch it by the hand. Do the end ones the same way, only in addition carry the cord from the pulley wheel along the apex of the roof, to another pulley wheel close to the centre, and bring down the cord over the roof in the same way as the first. You can thus take all three cords in your hand at once, by pulling which the blind will rise regularly from end to end, and you can fasten it at the top or any intermediate distance, by twisting the ropes round a post with a peg through it. When unloosed the weight of the roller will bring the blind down. On the same principle you may bring all the strings to one end, instead of the middle, and you may have as many pulley-strings as you like. Three would be quite ample for a length of seventy or eighty feet.

For pits, a similar plan may be used. Any mode, almost, is better than the littery mats we often use. I saw, the other day, a very simple and effectual mode in operation at the Hyde Gardens. Mr. Russell uses thin bleached calico, about the width of the sashes—say two yards; each piece covers from four to eight or ten lights, according to the size of the pit. Each end is fastened to a rod of wood about half-an-inch in diameter, and a foot or two longer than the covering. On one of these the covering is rolled up when not wanted. When used, one rod is fixed at the end of the pit, or frame. You stand at the front of the pit, hold the lower end of the other rod in your hands, and, placing the other end on the apex of the back of the pit, you turn it round, walking briskly along, and leaving the cloth on the glass as you proceed; the rod is then fixed at the other end. From having the rods longer than the pit you thus easily shade and unshade, without the rods ever touching the glass. On the cloth, opposite the handles of each light, there are strings sewed on, which, when tied to the handles, prevents any wind but a hurricane from moving it. The rods, besides being thus useful, are a great saving to the shade, as when not wanted, or in wet weather, they can easily be transported to a water-proofed shed. Any other cheap thin material, such as Nottingham netting, may be used in a similar manner.

Many, however, will object to the trouble even of these shades, and would prefer something that would give a mild continuous shade during summer. For this purpose, nothing is better than Hartley's patent rough sheet glass. I have also found that the fluted glass of the same firm is excellent for plants in summer. I have not myself proved the efficacy of either for early forcing, but information on this matter would be very desirable, as there can be no question that such glass would minimize labour in plant-growing in summer. But, as many have houses of common glass, many modes have been adopted to produce the desired result. The other day, I saw a house thickly encrusted with lime. The objection to this is, that if used in at all in a quick state it will injure both paint and putty. Whiting is better. The objection to both is, that the first shower will wash them off. Hence I have previously recommended double size, with the smallest amount of whiting—say the size of a walnut to more than a quart. I saw a great many of what had been fine blinds lying in a nursery, fast going to decay, lately, and the houses had been sized and whitened instead. The proprietor told me that it answered far better, and saved an immense of mishaps and bother in mistakes about shading. He had, however, put his on on the *inside* of the glass, instead of the outside, stating that when on the outside the rains washed it off. This, I believe, must have been owing to some mistake in the process. Besides, the moisture inside, especially when much of the syringe was used, would be apt to bring the material about the plants, and render them unsightly. In my own practice, I do not get rid of it until after the rains of autumn, when placed on the outside. Of course, a little whiting water, put on in a moment with the syringe, is washed off with the first shower. I may, therefore, repeat the essentials necessary for sizing the outside of the glass. Double or jelly size is used; that is heated nearly to boiling point, without any water being put with it. When the glass is thoroughly dry, and the sun not shining strong, it is put on the glass in the hot state, by means of a brush pulled briskly along it. This will give a roof resembling thin rough sheet. When a little more shade is wanted, the size of a marble of whiting is dissolved in the size, and when still more shade, the size of a walnut of that material. This sticks so fast, when so put on, that I have frequently had to use a little soda, in water just warmed, to remove it entirely, when the dull days of autumn came.

From trying various experiments, I can recommend another mixture, chiefly the invention of a respectable young painter. The mixture is as follows:—One quart of water, one pound of size, the jelly kind, one pint of turpentine, the size of a walnut of whiting, and half-a-tablespoonful of oil, all blended together, well stirred, and put on with a brush when hot. I am just now looking into a small greenhouse with a west aspect so done. For the glass of the roof, the brush was dipped in the mixture, and then pulled quickly along it. For the upright front sashes, the squares were thus painted, and then quickly daubed with the points of a dry brush, which gave it a slightly mottled appearance. When standing at a short distance, you cannot perceive that any thing has been done to the glass, and yet in the strongest afternoon suns, the shade has been quite effectual, and secured a luxuriant blossom, in the case of Pelargoniums, Fuchsias, Cactus, &c. There seems no likelihood of rains washing it off. A damp from the syringe, and a rub with a cloth or brush, easily removes it. I think that the bloom is better coloured, and longer preserved, than by any other mode of continuous shading. A little goes a great way. The turpentine and oil prevent all danger to the paint. In dull weather you can scarcely perceive that the house is shaded. No cloth of any kind could do it so finely, and then all the

trouble is saved. I do not think that more light will be wanted until the end of October. R. FISH.

CONIFERÆ.

(Continued from page 200.)

PROPAGATION: BY CUTTINGS.—A cutting is a small twig, or shoot, taken from a living tree, to form, when rooted, a separate individual capable of growing to the same size as the tree it is taken from, and also, when old enough, of bearing seeds. The reason, in general, why we increase by cuttings is because the tree or shrub so propagated is either too young to produce seeds, or will not produce seeds in this country. This is especially the case with the more rare or lately imported Conifers; as, for instance, the *Funereal Cypress* of China, and the *Cryptomeria* from Japan, both of which strike root from cuttings easily, and soon form young trees with leading shoots and side branches in all points equal to seedlings. It is quite true there are some that will root easily enough, but do not so easily form a perfect tree—some remaining with only side branches, and never attaining a central leading shoot. The *Araucaria excelsa* is an instance, and also the *Pinus nobilis*, and one or two others. I once saw an *Araucaria excelsa* that, when imported from Norfolk Island, had on it two leading shoots. The skilful propagator at Pine-Apple Place (Mr. Fancourt) took off one of the leading shoots, put it in as a cutting, and rooted it in a very short time. It grew apace, and formed as perfect a tree as the one from which it was taken. This gives us a practical hint how to obtain such perfect trees. All we have to do is to take out a central shoot, and thus induce several leaders, which may be taken off as soon as formed, and put in as cuttings.

The way to manage cuttings of Coniferæ is first to prepare a pot to put them in; drain it well, and cover the drainage with a little moss; then fill the pot to within an inch of the top with a compost of loam and sandy peat, mixing it freely with sand; upon this place an inch of pure sand, watering it gently to settle it and make it firm. Then prepare the cuttings—take them off the tree just at the point where the last-made wood joins to the wood made the previous year; trim off, without wounding the bark, the lower leaves, and branches, if any, and insert the cuttings in rows across the cutting pot till it is full. The best time to do this is about the month of October, though they will do pretty well even up to the March following. Water the cuttings gently, and allow the tops to dry; then place them in a very gentle hotbed, just warm enough to cause them to form a swelling at the base, but not so hot as to induce shoots, unless the operator has the convenience of a greenhouse to harden them off. They do not require bell-glasses, or, at least, will root very well without them. I have just now several pots of cuttings of this tribe, that are rooting beautifully in a gentle hotbed set upon coal ashes, without any bell-glasses, and scarcely one has failed.

In putting in cuttings of Coniferæ in the above manner, I refer more especially to the more rare kinds, such as the *Cryptomerias*, some *Cypresses*, *Taxodium sempervirens*, *Arbor vitæ*, and some of the genus *Taxus*. Others that are more common may be successfully propagated by cuttings put in early in the autumn, under hand-glasses, on a north-west border, where the sun leaves them about ten o'clock. For such the ground should be prepared in a similar way to that in the cutting pots, and the cuttings put in by the same method. The hand-glasses should be kept on through the winter, and removed as soon as they begin to grow in spring. If labour is no object, these cuttings may be taken up

and potted in small pots, and placed under a cold frame to encourage free growth, only take care to plant them out in nursery rows before the roots become matted round the pot sides. Should any of them have done so, carefully disentangle them, spreading the roots out equally on every side. These remarks on potting off the cuttings apply equally to those struck in pots on the hotbed.

The very commonest of Coniferæ may be propagated by cuttings in a still more summary way. As soon as the annual growth is perfected, take off the cuttings, and plant them in rows across a shady border, making them very firm in the soil. The kinds that will grow by this simple means are the *Irish Yew* and its varieties, the common *Arbor vitæ*, the *Swedish Junipers*, and most other small-leaved varieties that are very hardy. The large-leaved Conifers do not strike easily by cuttings, but must, where seed cannot be procured, be propagated by grafting, of which I shall write by-and-by.

No method of propagating this fine tribe is, however, so satisfactory as that by seed. Many of our readers are, no doubt, aware that great quantities of seeds are annually imported into this country, and from these we obtain abundance of young plants. Government has even paid some attention to this point, and have appointed four eminent nurserymen to raise the seedlings (I refer to the *Deodar Cedar* from the Himalaya mountains) to be planted in the Royal Forests. From this we must infer that the Commissioners of Woods and Forests either have no means of raising the seeds, or no man skilful enough to entrust them to.

I have been led away, by the above remarks, from my subject, and am tempted again to digress to inform our readers, growers of Coniferæ, that there is, in Scotland, a society established for the purpose of sending out a collector to search for seeds of Coniferæ, as well as other hardy trees; and I have been informed that they sent one out some time ago, and have just now received their first consignment of seeds from Oregon, which consist principally of *Pinus nobilis*, *P. monticola*, *P. Pattoniana*, and *P. ponderosa*, besides several that are thought to be new. As public attention has been directed to our national forests, why does not the government send out collectors to gather seeds of good and rare hardy timber trees? If honestly done, the public would never grudge the expense, though the proceeds of this outlay would be for the benefit of the coming generations.

T. APPLEBY.

(To be continued.)

THE PINK.

(Continued from page 200.)

PROPERTIES OF THE PINK.—As some of our readers may not exactly understand when their plants and seedlings produce blooms of first-rate quality, I shall describe the properties florists have agreed upon to constitute a perfect flower. Not that such a flower is often seen, even at the best exhibitions, but such forms and colours should be constantly striven for, till perfection is obtained. And let no new beginner despair because he may not succeed at first. Perseverance must be his motto, and he may feel assured that success will follow in time, provided my instructions are well and diligently followed up, whether he tries his skill in growing established varieties, or the more speculative operation of raising seedlings.

The Pink is now a very much improved flower, if compared with what it was in my younger days. Then eight petals were considered quite sufficient to form a good flower. I remember one that was thought a masterpiece, and there are many florists yet living in the

north of England that will remember it also. It was named Bowe's *Sucarrow*; and, certainly, as far as colouring went, it was much superior to any then in cultivation. Such semi-double flowers are not tolerated now, excepting, perhaps, in some few places in the north. In the south, a flower must be fully double; so much so, that it should form the half of a ball, rising up to the centre, and should be perfectly circular in outline. Each petal should be stout, broad, and smooth at the edges. This smoothness is called *rose-edged*, that is, without any notches or teeth. In fact, the edge should be as if it had been clipped smooth and even. The lowest tier of petals should be the widest, reaching in diameter at least from two to two-and-a-half inches. The next row should be shorter, so much so, as to show the lacing fully on the lower petals; and the next shorter again, and so on up to the centre, which should be well filled up without confusion. The ground-colour should be pure white. The lacing, or circular stripe, should leave an edge of white outside of it, and another inside; this lacing of colour should be of the same width as the outside edging of white, and should be smooth and even at the edges; in fact, laid on as if it had been traced by a skilful hand with a fine camel hair pencil. Then, at the bottom of the petals, there should be another body of colour, the same as the lacing, to form a bold rich eye.

I have given an example above of the old style of the so-called then perfection of the Pink. I will now, to show the contrast, give an example of the style in which the properties of a good Pink are exemplified at this day. Mr. Turner, of Slough, last year exhibited a new Pink, named *Optima*, which may be described as a flower of fine form, perfectly round, smooth at the edges, full size; ground, pure white, with an even, solid lacing of rich dark purple, and very double. This flower may be considered as being as nearly perfect as possible. It is very double, and full up to the centre. Every raiser of new varieties should procure this, grow it well, and bloom it finely, and then compare the seedlings as they open their blossoms, and if they do not come up to, and even surpass this example, cast them away. Any flowers that have self-coloured petals; the calyx, or flower-cup, split on one side; any notching on the edge of the petals; or any specks, or spots, on the ground-colour; if the petals are thin and flimsy; or any of them project beyond the circle, or overlap the petals below, so as to hide the lacing;—any flowers having these faults, permanently, must be discarded at once, for all these are bad properties, and would disqualify the variety as an exhibition flower.

With these brief notices of the properties of this charming, fragrant, hardy flower, I close my paper on Pink Culture, and now shall proceed to give a very select list for 1853. Just now is the time to procure pipings, and I would recommend purchasers wishing to add to their collection, and having conveniences for striking pipings, to give their orders. Pipings can be sent easily and quickly through the post, and, if packed in a tin case, lined with damp (not wet) moss, will travel safely hundreds of miles.

PURPLE AND DARK LACED PINKS.

Arthur (Turner), extra; smooth on the edge; good shape.

Ada (Read), fine.

Beatrice (Kirtland), rosy-purple; good.

British Queen, dark.

Black Prince (Parker), new and fine.

Charles Peers, Esq. (Looker), good.

Charmer (Hooper), extra.

Criterion (Maclean), dark purple; very fine.

Desdemona (Bragg), fine large petals; extra.

Earl of Carlisle (Turner), very dark, lacing clean; well-formed flower.

Edgar (Turner), extra fine; purple.

- Gay Lad* (Kirtland).
Hector, dark; extra.
Harry (Turner), dark purple, rich broad lacing; a very bold flower.
Heroine (Looker), dark purple; extra.
Julia (Young), light purple; good.
Jenny Lind (Read), good.
Kossuth (Read), fine.
Lola Montes (Costar), extra fine; purple; good form.
Medora (Looker), rather thin, sometimes best in other properties; excellent.
Mrs. Hooper (Hooper), fine.
Mrs. Herbert (Keynes), dark, and very fine.
Narborough Buck (Maclean), fine; dark.
Optima (Turner), extra fine.
Optimus (Fellows).
Prince of Wales (Bragg), extra fine; light purple lacing.
Queen of England (Hale), good.
Ruby (Bragg), dark ruby; fine petal.
Sarah (Turner), rich dark lacing; clear white; full, without being confused.
Whipper-in (Smith), rosy-purple.
- RED AND ROSE LACED.
- Brilliant* (Ellis), very bright; fine form.
British Queen (Hillyer), rose; fine.
Constance (Turner), red; medium size; smooth edge.
Diana (Smith), extra.
Empress (Turner), dark red; fine.
Gem (Hodges), rose; extra.
Lord Charles Wellesley, rose; smooth petal; extra fine.
Koh-i-Noor (Bragg), rose; smooth petal; early bloomer; fine.
Mrs. Maclean (Maclean), lilac-rose.
Mrs. Edwards (Keynes), rose; extra.
Mrs. Bragg (Bragg), fine rose; smooth edge.
Othello (Looker), red; extra.
Sappho (Coleutt), dark rose; extra fine.
Sir R. Peel (Hall), fine; rose.
Winchester Rival (White), rose; very good.

T. APPLEBY.

MELONS, AND THEIR CULTURE.

(Continued from page 225.)

WHATEVER merit there may be (and there certainly is a great deal) in producing Grapes fit for the table, nearly, if not quite, all the year round, we can scarcely ever expect to do the same with Melons; for, with the exception of those kinds which keep some time after being cut, we have little hopes of ever seeing them in good condition at Christmas, for, unlike the Cucumber, and some other things, a large amount of sunshine is wanted to give them that flavour which a connoisseur insists on as requisite; while a similar difficulty exists in spring; for the plant being an annual, and impatient of dull or damp weather, the difficulties of carrying them through the "dark days" is much more than is the case with Cucumbers. Nevertheless, the skilful cultivator endeavours to do it; and though he prudently leaves the rearing of his plants until these dark days have set in, and then germinates the seeds by the force of artificial warmth, still, the mishaps they are liable to, and the little progress they make for some time, render them exceedingly precarious; nevertheless, if they survive, they come in a few days earlier than those sown at the beginning of the new year, and that is of consequence. Omitting, however, the details necessary to accomplish this till a more favourable opportunity, we shall go on with the routine of an ordinary hotbed, as being one of the most common, if not one of the best, methods yet in existence.

Although cultivators differ much in the manner in which they construct their hotbeds, yet in some points they agree. For instance, few would think of building a hotbed in January the same way as they would in June, though each might have a different system for each of these periods. The reason is obvious: a hotbed in January is expected to furnish a certain portion of heat for a very long period, and during trying circumstances; whereas, in June the atmosphere itself, as well as many other things, conspire to render a less amount of artificial warmth necessary—at least, it is so for a shorter period. Now, then, as this is the case, the materials used are so with a view to give it the heat required for the time, and no longer; whereas, the early spring or winter bed must be constructed so as to be capable of being prolonged to an indefinite period; and the best way to do this is not to make the bed itself the source of heat, but the receiver of it from another origin, at the same time contriving it so that it may receive the heat by the most direct channel and with the least possible loss. Various have been the devices to accomplish this end by bricks and mortar; and, since the days of McPhail, almost every one having a pit to build had some suggestion of his own to work in the matter; and some time before hot-water pipes became so fashionable, a mode of supplying both bottom and top heat separately, from linings, was strongly urged on by the advocates—a system of heating structures called Mills's Pit. This, however, was attended with too much labour to be carried effectually into general use—hence their abandonment; and where the more mechanical structure could not be put up, the more homely way was adopted, which may be explained in a very few words.

We will suppose that a two or three-light frame is at liberty, and the site chosen open to the morning, mid-day, and evening sun, and some loose timbers, faggots, or brush wood, or it may be all three,—with which to build up a sort of square stack, some two or three inches larger each way than the frame to be placed thereon; and if large timbers be used it will not sink much, and had therefore better be made as hollow as possible. Faggots and brush wood, being smaller, will generally fall in a little, and some allowance must, therefore, be made for that. About three feet high will be usually sufficient, the top being made somewhat smooth by the use of smaller pieces. Observe, that in building this bed, the rougher the material used the better, and the opener they lie, the more cavities there will be for the heated air. Now it is easy to accomplish this, and coarse, rugged pieces will do it pretty well, taking care to have the sides and ends somewhat uniform, and the top level, or with a slight inclination to the south, if the make of the box has not already secured that. This is easily accomplished, and the frame, being placed on some littery straw, or other open matter, may be placed over the timber, or faggot wood, and some rough leaves over that, and then the compost for the plants.

Observe, in this plan every source of heat is from the linings, which must be sedulously kept up, otherwise bad consequences follow, and, as we have said, about three feet will be sufficiently high for the centre or hollow bed; it will be necessary, at all times, to have the lining a little higher than that, by banking them up against the sides of the box, or frame, for anything suddenly sinking them at any one place below that level, as the treading on, or other causes, will make an outlet for the heated air to escape out at, and, consequently, defeat the purpose the bed is made for.

In furnishing a heating material to a bed built on this plan, very coarse articles will do, and that without any preparation; for as the heat only reaches the part intended to act upon by a circuitous route, its virulence,

supposing it to have any, is much modified; in fact, the object here to be attained is the supply of plenty of warmth, as it rarely happens that too much is furnished, for if it were, a safety valve, in the shape of sinking any one of the linings a few inches down below the bottom of the box, or frame, will speedily let off any amount of superfluous heat; but we never knew this required, and do not believe it ever will be. We may observe that, instead of wood, rough stones have been sometimes used, and sometimes a combination of wood and the fermenting material, as dung-built-up ends, and the centre of the bed of hollow stuff, and if the latter be of faggots, or similar small things, it will usually sink about as much as the dung ends will do. This, however, admits only of lining being applied on two sides (the back and front), but it is, perhaps, quite as well on that account, and we have seen such work exceedingly well; and the genial warmth supplied to a bed, from such means, rarely fails to be grateful to the plants inside, and we have seen Pines growing luxuriantly on this principle in summer.

Another method, on principles similar to these in use in the above cases, is to have an open chamber underneath the frame, or box, in which case the bottom must be supported by boards, or other means, and a larger or smaller space underneath, as the case may be. This plan has its advantages by all the heat thrown in acting at once on the bed, which, however, is not so easily kept up by the bottom being suspended, that a degree of unsafeness seems to hang over it, incompatible with that security which forms no inconsiderable feature, as well imaginary as real in many things of social life—but where it is in use, the mode of action is precisely the same; the dung, tan, or other heating matter at the side, provides the heat wanted by filling the hollow chamber below with it, and thence it heats the substance above. Modifications of the above systems exist in every form; for instance, a hotbed is made of dung, or dung and leaves, and a sort of rough flue of faggot wood, or other matter, is built into it in one or more plans, which forms a means whereby heat from the outside may be conveyed to the centre by linings; other contrivances, bordering more or less on this, are to be met with, and some build the hotbed entirely of dung, &c., and depend on the linings renovating the heat in it when that declines, but as this is attended with a loss by the almost non-conducting substance the heat from the linings has to act upon, it is seldom adopted, except in such cases as where the heat of the bed has declined before fulfilling all the purposes expected of it; for instance, an ordinary hotbed may want renovating in the autumn, to ripen off fruit that dull weather and other adverse circumstances seem unlikely to do without, or many other objects may render the application of a lining necessary to a bed, which was not expected when it was first built. But more of this anon.

J. ROBSON.

HAY-MAKING.

(Continued from page 226.)

HAVING previously treated of the making hay from field grass and the clovers, I now propose to write upon the subject of making hay from grass, the produce of dry pasture land and meadows, including those under irrigation.

The best time for cutting the meadow grasses for hay cannot be named, because numerous circumstances continually occur to vary the period, such as the difference in seasons, and the variation of the quality and aspect of the soil. Dry pastures in a good state, where

they have been laid up early, will usually bring the grass forward enough to cut about the middle of June; but those which have been neglected, and unmanured, will require a longer time, to allow the bottom grass to get up, in which case it is desirable to defer the cutting until the early part of July, although the earliest sorts of grass, which made the first head, may be over-ripe.

When the greater portion of the forwardest grasses are in blossom, including the clovers, it is then good policy to cut for hay, as a general rule; but in this case, as in most other matters connected with the business of farming, parties must be guided, in a great measure, by circumstances, and by their judgment and experience.

In the case of water-meadows, where irrigation has been properly attended to, the proper time for cutting the grass must be decided more by the amount of crop than by the forward state of the grass; for it often happens that the produce is much laid before many of the grasses are in full blossom. When this is the case, the sooner it is cut the better, for two reasons—the hay will be finer, and of better quality; and the succeeding crop, which is a matter of great importance, will be forwarder, and more abundant.

Where meadows are sour, and produce mostly the coarser kinds of grass, it is a good plan, when intended to be cut for hay, to feed them with cow-cattle, and not lay them up for cutting until the first week in May, and to run the scythe over, taking off any rushes, or coarse grass, which might be left. This effectually checks the growth of the inferior grasses, and gives a fair chance for the finer and better sorts to make head, which they never do in cold and backward meadows until the hot weather sets in.

In the making of hay, according to the most approved method, the number of mowers should be fairly apportioned to the work to be done, in order that all the grass intended for the same stack may be cut with as little delay as possible—it will then be ready for carting nearly all at the same time, and the rick may then be topped and made secure against rain. The first thing to be done, if the weather is favourable, is to ted or scatter the grass regularly over the ground, either by women or boys, or, still better (where the land will allow its use), by the hay-making machine. About three or four hours after, turn the hay over with the hand-rake in small windrows, and towards evening put it into small grass cocks, or pooks, to remain until the following day. This plan is more especially desirable in low meadows, which are all liable to fogs at night, for it bleaches and takes off the colour, and damages the hay like rain, only not to the same extent. The second day, open the grass cocks, and throw them into rows, or what is termed narrow beds, after which it should be turned once, and shook up light with the prong during the day; and in the evening put it together into good-sized pooks, as at the end of the second day (if the weather is fine) the hay will then be in a forward state. The third day open the pooks, and throw them into large beds, leaving a good space between to allow the hand-rakes, or, what is preferable, the horse-rake, to

pass along and clear the land for carting. Unless the crop is very heavy, the hay will now be ready for carting to the stack, and should be cast up into large rows a short time before it is taken up, in order that it may be put into stack in a perfectly dry state.

Where the crop is very heavy, and the meadows lie low, and moist, the hay may require an extra day before carting, in which case, throw the hay into pook for the night, and afterwards treat it as named above for the third day. When the crop is light, and the weather very dry, the tedding may be dispensed with; much expense will be saved, and very useful hay may be made upon upland meadows, by merely turning the swarths until it is fit to cart, but this plan cannot be recommended when hay is intended for sale, as is often the case in the neighbourhood of large towns, it being well known to buyers of hay that quality and colour go together.

In the management of the after-math, or second crop, the same rules may be observed; but it being not generally an article got up for sale, some of the expenses of making may be oftentimes saved when the hay is intended for inferior purposes.

I do not, however, approve (except in the case of water meadows) of cutting the second crop for hay, believing it to be far more beneficial and profitable to occupiers in general to feed the grass produce during the autumn.

I would here observe, that in a changeable climate, like that of the British Isles, we should be "always, if possible, prepared for rain; and although certain rules for making hay have been laid down, yet the great art consists in an unremitting attention to the process, by allowing a liberal number of hands in the field, and keeping up a continual observation of the weather.

In the preparation of grass land for the crop of hay, it is, I fear, too much the rule, where farms contain a large portion of arable land, to apply the greater part of the manure to the latter, and to allow the former to fall into a neglected and poor state; and I must here state, that unless parties are prepared to manure the pasture and meadow land liberally, the best plan that can be adopted is to feed and cut the grass for hay each alternate year.

This change I consider as necessary for the benefit of meadows, as the change of green crops and fallows are for the advantage of arable land under tillage for corn crops.

The improvement which water-meadows receive from irrigation in general, where the water is good for the purpose, renders the application of manure almost superfluous; yet it must be admitted, that when fed by sheep, they derive benefit by it if the water be not laid on too hastily immediately after.

In the stacking of meadow hay, particularly when intended for sale, stacks of a good size, say from twenty to thirty tons each, are desirable, as the hay comes out more compact, and is more profitable, without waste. Some growers prefer heating in the stack to a consider-

able extent for this purpose; but it must not be carried too far, otherwise it will deteriorate the nutritive value of the hay.

JOSEPH BLUNDELL.

POULTRY DISEASES—GAPES.

In reference to this disease, I have received several letters detailing different modes of treatment, more or less successful. Before making any extracts from them, I may mention a few circumstances connected with the disease. Gapes is occasioned by the presence of a number of small worms in the windpipe; these adhere by a sort of sucker, and their presence causes a partial obstruction of the passage, and excites a degree of inflammation which often proves fatal. No remedy seems effectual unless it can be applied directly to the interior of the windpipe. The old plan was to nearly suffocate the chickens with tobacco-smoke, but this was only partially successful. A correspondent, relating his experience, says:—

"As the season advanced, a large portion of the chickens died about six weeks old. I observed they drooped their wings, and gaped, and panted, and became almost skeletons; at length I opened the trachea of one of them, and found in it a coil of red worms, they seemed to me exactly to resemble those transparent and lively gentry to be met with in stagnant water, *i.e.* in rain-water butts. Upon inquiry, I found the disease attacked the young pheasants in the adjoining preserves, and that the keepers thought there was no cure for the disease. I set to work to see what I could do. I made an instrument of very fine wire, like a corkscrew; with this I endeavoured to extract the worms, and partially succeeded, but found that it was prone to lacerate the windpipe. I improved upon it by taking the flight-feather of a pigeon, and stripping off the feathery part, so as to form a brush; this also succeeded in part, but it was too flexible to detach the worms, which, like leeches, are fastened by a *sucker* to the windpipe, so, having heard that spirit of turpentine was destructive to all such gentry, I dipped the feather-brush into spirit of turpentine. An assistant held the patient, and, watching the opening of the valve leading into the windpipe, I thrust down the feather, gave it a twist or two round, and set the chicken on the ground; the poor little animal coughed exceedingly, and the worms were thrown up to some distance, and the cure completed. After a few hours the wings were folded up, and evident manifestations afforded that all was well. A turkey hen had a brood of twenty-three common fowls, young; all were diseased; two were suffocated in the operation, the other twenty-one were restored to health. Of course the operation would fail if the instrument is thrust down the throat instead of into the windpipe.—Y."

In commenting on this communication I would state merely, that there is some difficulty, except the operator is expert, in passing any substance into the windpipe without injuring this very delicate organ; carefully performed, there is no doubt but that the operation is efficacious.

Another correspondent, who suggests a different remedy, states—

"I have been very successful in the treatment of my chickens, and out of thirty attacked with this disorder, during the present month, I have lost but one. I dare say the remedy is known to you, if not, *pray make it public*:—'When the chickens first make that peculiar sneezing noise (before they stretch out the necks and gape), dust the coop every night with powdered lime (about a handful); throwing the lime to the upper part of the coop, in order that it may fall down upon the chickens; then immediately shut them up. Do this for two or three nights successively; give, at the same time, *three times a-day*, in boiled rice or grits, a *wine-glassful of Agrimony tea* to about twelve chickens. This tea is made by steeping the common field-weed, 'Agrimony,' in boiling water for a couple of days or so, until the water becomes of the colour of light Sherry wine. The Agrimony should be collected in the autumn and dried, to be ready for use in the spring for the early broods; it is, however, easily to be obtained at this season of the year. I have found this a never-failing remedy; and as my broods are usually attacked with this disease, I use it with great

success. As I said before, if this remedy is not widely known, pray make it so through your valuable paper.—F. N."

The fine dust of the lime being inhaled by the chicken is evidently the active agent in this mode of treatment, the Agrimony merely acting as a tonic.

Some time since, my attention was directed to the removal of these worms from the windpipe, which I was desirous of doing without in any manner injuring the patient. I, therefore, tried turpentine fumigations, and with considerable success. The plan I adopted was merely to place the chicken in a small box, or under a glass shade, and pour some turpentine on some loose shavings contained within it. The lid (if a box be used) was then closed, and the bird compelled to breathe the vapour as long as it could withstand its effects. I communicated this plan to Mr. Lort, who is well-known as a successful breeder and exhibitor, and in reply he stated—

"The fumigation with turpentine answers admirably; I have tried it in three cases only, and it has been successful in all; I think, generally, it will be found well to repeat the fumigation. I place the patient upon a bench with a hole in it, and cover him with a glass shade; the spirit, I put upon rag fastened to the end of a stick, which is held, whilst burning, just below the hole in the bench. If you wish to mention this in *THE COTTAGE GARDENER*, do so; I am sure I am greatly obliged to you for having been the means of saving the lives of my chickens."

It will be seen that Mr. Lort varied the plan by employing the turpentine in a burning state. I should wish those who have many cases to try both plans, and ascertain which is the most convenient in practice. I think that both are equally efficacious, as the turpentine vapour, so destructive to that class of animals that cause the disease, is in both cases brought into immediate contact with them by the breathing of the chickens. I shall be glad to learn if the plan is equally efficacious in other hands.—W. B. TEGETMEIER, *Tottenham, Middlesex.*

THE HISTORY OF FRANK RANDALL.

By the Authoress of "My Flowers."

THE following true story is addressed to three classes of persons; to young men; to young women; and to all who have the management of those valuable institutions—Benefit-clubs. It has been sent to me by the kindness of the same friend to the poor who has already supplied me with the sketch of William Green's eventful life. It is always most interesting to read what is written fresh from the heart; and, therefore, in spite of the writer's modest remonstrance, I must give it to my readers, just as it was sent to me.

"Frank Randall was born of humble but respectable parents, holding, I believe, rather peculiar religious views. They gave their only son the best education their limited means allowed, and he was apprenticed to a trade affording prospects of further improvement, and, to a *steady man*, ample probability of success in life. Of his conduct as an apprentice I had no means of ascertaining anything; but from his character in the earlier period of his manhood, I have little doubt but that it was satisfactory. He was married early (not, however, before his means warranted such an important step), to a young woman who was servant in the family by whom he was employed; and she was, indeed, a bright example to the wives of the labouring classes. Neat and tidy in her person, she was delicately clean in her house and furniture, exemplifying the old remark, that 'Cleanliness is the handmaid of Godliness.' It was, indeed, a cheering sight to see this happy couple wend their way, in their Sunday attire, to the house of God, as regularly as the cheerful chimes summoned worshippers to bend the knee at the Throne of Grace.

"But, alas! bitter things were in store! The wife, after giving birth to a son, showed symptoms of consumption. Deep was the distress of poor Randall, for he loved his help-mate with all the affection she deserved, and that was no stinted measure; but her appointed time was come, and her Heavenly Father called her away to realms of brighter and more enduring bliss. Randall was now left alone with his only boy; and it is not to be wondered at, that when months

had rolled away he again looked round for a wife; but, unhappily, he did not show the same wisdom in his choice of a second as he had done in the first. It was at this time that he came more particularly under my own notice, as he entered into my establishment about the same period. He was esteemed a valuable acquisition, and so indeed he was; for added to the intimate knowledge of his business, he was superior to the usual class of workmen in several respects; he wrote an excellent hand, and knew enough of accounts to have gained him the situation of schoolmaster in any parish in England. He was also temperate and industrious, as well as trustworthy and honest. As was natural to a provident man, he was anxious to secure to himself help in sickness, and became a member of a club held at a public-house. And here let me pause, to state my decided conviction, that provident clubs, desirable and admirable in themselves, if held at public-houses are too frequently a curse, instead of a blessing; dispensers of misery, instead of good; certainly it was so in this instance.

"From the superior education of Randall he was soon chosen as steward, as by his knowledge of accounts and book-keeping he became extremely valuable to his club. His first deviation from the path of sobriety arose from this unhappy connexion, and having lost his self-respect, a repetition of the sin became almost a matter of course, and he had to be severely reprimanded for his conduct, which, I believe, at the time, made a serious impression upon him, and he resolved to avoid the temptation in future; but, like all resolutions made in a man's own strength, it was only made to be broken. The club night again came round, and Randall was again intoxicated. Unhappily too, his home, under the new management, instead of being clean and comfortable, as formerly, was dirty and miserable, so that he had not the same inducements to remain by his own fire-side. Oh! that the poor man's wife was more alive to her own responsibilities in this respect! for I firmly believe many an unhappy man has been driven to the ale-house from the wretchedness which exists around his own hearth. Strong, indeed, must be the principle of him who can resist the temptation of a bright fire and cheerful hearth of the public-house, when his own home is wretched and filthy.

"I always dreaded the approach of club night; and I think I now see him, when about to receive his wages on the previous Saturday, looking guilty by anticipation, and expecting the word of warning, which was invariably given upon the occasion; but, alas! without effect; for, from being occasionally intoxicated, and only on such occasions, it became a matter of very frequent occurrence; in fact, he became a confirmed drunkard."

The continuation of Frank Randall's history I must keep for another paper. I will pause here, to give my readers an opportunity of considering what *one* wrong step leads to; how the first step in sin ends; and from what fair-seeming circumstances mischief sometimes springs. The very fact of Randall possessing a good and steady character, and a superior education, led the way to his sad downfall. Not because steady character and good education are bad things; no; but because, *in themselves* they have no root, nothing to hold by; and the very situations they render us fit for are situations of temptation; and we know that those "who have no root," in "time of temptation fall away." How many a man has done well, and walked respectably, in a quiet, out-of-the-way path of life; who, when brought into a place of trust, or where his real principles have been tried, has done evil! All this shows us what it is we want to keep us straight, and to hold up our steps that we slip not. We do not want, we do not need, wisdom, or knowledge, or skill, or learning, or worldly advantages; even character itself can do nothing for us when temptation comes. What we want, and need, and *must have*, to insure our safety, is the grace of God in our hearts. Nothing else will keep us steady, and prepare us for every situation the providence of God may place us in. If a man *dares not* offend God; if he *loves Him* with all his powers; he may be tempted and tried this way, and that way, but "the Lord delivereth him out of all." We may *resolve*, like Frank Randall, but except we have hold of God's hand, our resolves will go with us to the bottomless pit, as sure as that you, my friends, are reading the words before your eyes. They will not stop *us*, but we shall overpersuade *them*, and they will

not wait for much pressing either. Now, let those of my readers who are inclined to pay a first visit to a public-house, upon any pretence whatever, ponder upon the case of Frank Randall, until I can bring before them the remaining part of his unhappy story. He has already become a confirmed drunkard, after years of steady respectability. Let us "watch and pray lest we fall into temptation" also.

ALLOTMENT FARMING.—JULY.

THIS has certainly been an extraordinary spring: one, indeed, made up of extremes. After some five weeks of intense sunshine, with barely a shower, we have now, June the 14th, had three or four days almost incessant rain; and such a rain, according to the needs that existed, as I scarcely remember. A continuous sprinkling—fine as that from a gardener's cutting water-pot, yet enough to wet a man through in ten minutes. Farmers hereabout had almost attained despairing-point; the hay-crops, on which almost everything may be said to hinge, in a great cheese district, were likely to prove lamentably deficient, and had the rain delayed one week more they would have been irrecoverable. As it is, the soil through this part of the kingdom is thoroughly moistened, and the crops wear a most exuberant appearance.

As for *Potatoes*, I never knew them come up so true in my time; scarcely a "set" has missed, and the fields uniformly look in the highest health; not, however, that gross and watery appearance which makes the haulm squat down in a draggled state with the least shower. This is traceable to the continued sunshine they have enjoyed; no crop more delights in sunshine than this. It is to be hoped that the gardens of allotment-men are much cleaner this year than usual; every chance has been offered by the weather for eradicating weeds. The Potato crop assuredly suffers more than many from weeds; let us advise that every attention be given them in this respect. Those who desire to have good crops of every early kind in the next year must look out for proper seed for that purpose towards the end of this month, or beginning of the next, and place it separate from the general stock. Too many leave this point neglected, and when the planting period comes round, they have to purchase, and probably pay double price for them. Besides, seed potatoes require different treatment from ordinary stock; they require light to harden and slightly green them; at least, such is my practice, and the practice of most good cultivators; whilst those for eating cannot be kept too dark. Besides this, there are other matters, which, both with regard to early and late Potatoes, point to the propriety of at once separating those for seed, and giving them special treatment. And now let us see what the object is, and what the conditions to be aimed at. The prime object is, doubtless, to prevent them sprouting until the ensuing January, and this is not accomplished without much caution. The two chief points are low temperature and dryness. Some of our friends may smile at the idea of a low temperature in July and August; but they may remember that all situations are not alike even in those levelling months; a front room, or shed, facing the south, may average 70°, whilst a cellar, at the north side of the house cannot average more than 55° to 60°. However, dampness is more a promoter of germination than mere heat; above all things, therefore, let a dry situation be afforded them. I have proved that Potatoes will sprout more rapidly on a damp floor, at a temperature of 55°, than they will on a dry shelf, in a dry room, with a temperature of 70°. The drier and cooler the place where they are kept, therefore, the better. My practice has been to spread them, about three inches in thickness, on a boarded floor in an upstairs room for several weeks after taking-up. Here they become rather green, and they are turned two or three times during this period. I ought to name here that this room faces the north; it is over the fruit-room.

ROOT CROPS IN GENERAL.—Cleanliness and a systematic setting-out of the plants are now the points for consideration. Of course, what is termed "singling out," has been carried forward long since; and about this affair I must beg to interpose a remark. Mr. J. Blundell, who writes like "one

who has whistled at the plough," together with a keen observance of advances of a high character, gives distances, at p. 203 of COTTAGE GARDENER, for June 16, which, although evincing, and suggestive of, that kind of high culture which must one day be the rule, is of too high a character for our allotment friends, who cannot so frequently gain access to the guano bag, and whose muck heap is very narrow in the waist. I see our clever coadjutor recommends for Swedes, twenty inches between rows, and fifteen between the plants; Mangold, two feet the rows, and eighteen inches the plants; Carrots, eighteen inches the rows, and seven to eight inches the plants.

Now this, under a very high course of husbandry, may be quite correct, and no man can more dislike what I may term the cramming system than I do; at the same time, I have learned to distinguish between unpliant systems, and those which are capable of modification according to circumstances. Now the distances between such roots, must, and ever will, vary with practical men, who will, of course, judge of the distances by the character of the soil and the reasonable expectations founded thereon. Mr. Blundell, however, has so well anticipated this kind of objection, that his closing paragraph all but sets the matter at rest, and I merely point to the affair, fearing that our allotment friends, who know more about ploughs and spades than pens, may, in their haste, lose sight of an important fact. Now, there is land near me, so poor in staple, on which both Mangold and Swedes have been repeatedly grown, that two-thirds of the distance before quoted is amply sufficient; so our readers must herein judge for themselves.

But most of the main cultural processes will have been completed before this monthly notice comes to hand, and we may now urge the necessity of cleanliness during the remainder of the season—a freedom from weeds. Most cultivators object to soiling up Mangold, but we have always found it beneficial to the long red sort; now, however, the *Orange Globe* is chiefly grown, and soiling up here is out of this question. Some care must be taken over the *Swede* beds intended for transplanting after Potatoes or other crops; all weeds must be kept down, and the beds slightly thinned if very crowded; added to this, we generally run a scythe lightly over their tops when they begin to get lengthy; this, however, must be done with a light hand. When transplanted, the best plan is to dip their roots in a thick puddle, to which some soot has been added; the latter has a tendency to prevent disease. By the middle of the month it will be known whether the Carrots will escape the grub. If any ravages occur in this or any other root crop, the blanks may be made good with Swedes or dwarf Cabbages.

THE CARROT AND ONION GRUBS.—Most of our readers are, doubtless, tolerably familiar with these pests, perhaps the worst the gardener has to deal with, although such diminutive creatures. I am not in the habit of executing contracts, or gaming speculations, but if the aggregate loss in Carrots and Onions could be calculated, I would not accept twenty thousand pounds with the liability to liquidate every damage of the kind annually in the United Kingdom. Many plans have been suggested for the riddance of this pest, but little of a thoroughly conclusive character can be laid hold on. I am at the present moment proceeding as follows—an experiment in which I really have some faith, and the merits or demerits of which I shall feel it a duty hereafter to state:—Soap water—nearly two ounces of soft soap to a gallon, beat up into a froth, is syringed over the young Onions, and the operator immediately dusts the plants over with fresh soot, the produce of newly swept chimneys. This is done on the principle of creating an abhorrence in the fly by the nauseous smell, which, for a long time emanates from the beds.

CABBAGE-WORTS.—Under this head we may include the various Greens which are so useful in the ensuing winter. July is the principal month for planting most of them out, although the operation will necessarily extend into August, especially as mixed crops. The *Green Kale* is one of the most profitable, and the *Savoy* is very useful, but requires too much room for small plots, or close cropping. *Brussels Sprouts* are a most profitable green, and will endure the hardest winter; they are particularly adapted for mixed cropping, as standing in a narrow compass. Those who want much profit from any of these, should get them out

by the middle of the month, if possible. In the very first week of the month *Dwarf Cabbages* should be sown for *Coleworts*: these are a very useful article, and will do, like the Swede, to fill up blanks.

Of course, all routine matters of weeding, hoeing, and cultural processes, will be attended to; and, amongst other things, the manure-heap should receive its share of attention. Our practice is to cover it occasionally with a little soil to prevent its drying, and, consequently, wasting its properties.

R. ERRINGTON.

AMATEUR TULIP SOCIETY.

THE tenth Annual Exhibition of the above Society took place at the Horn's Tavern, Kennington, on Monday the 30th of May, and, notwithstanding the untoward nature of the season, proved to be the best the Society ever had, and probably, for the quality of the flowers, the best which had ever been seen in the United Kingdom. Certainly the first four stands might challenge comparison with anything which has ever yet been produced in public, and came as near to perfection, both in growth and character, as could be attained with the varieties now in cultivation. Mr. Headly's stand was highly interesting, and attracted much attention, from the fact of its consisting entirely of seedlings of that gentleman's own raising, the majority of which were of the highest order of merit. It will be seen that this collection furnished the finest Byblomen in the room.

After the show, the members and their friends dined together, the company, as usual, including the very first cultivators of the day. Among whom may be mentioned Mr. Henry Goldham, Mr. Lawrence, of Hampton, Mr. Willimer, of Sunbury, and Mr. Lightbody, of Falkirk.

In the course of the evening, E. T. Clark, Esq., on the part of the members and honorary members of the Society, presented to the Honorary Secretary, Mr. Crook, a costly silver coffee-pot and cream ewer, of elegant design, in token of their approval of the manner in which he has fulfilled the duties of his office from the first establishment of the Society to the present time. The estimation in which they are pleased to hold his services was also further set forth in a beautifully written testimonial which accompanied the above elegant present.

We subjoin the award of the judges.

Censors.—Mr. H. Goldham, Mr. R. L. Lawrence, and Mr. Willimer.

First prize, S. Sanders, Esq., Staines.—Lady Crewe, Sphinx, Cerise Bellifforme, Vivid, Bion, Sir H. Smith, Cleopatra, Acapulca, and Sir James Watt.

Second prize, S. Treacher, Esq., Wycombe.—Princess Royal, Royal Albert, Catalani, La Belle Nannette, Elthron, Pandora, Mercellus, Cerise Bellifforme, and Strong's King.

Third prize, R. H. Betteridge, Esq., Abingdon.—Triomphe du Monde, Gyges, Cerise Bellifforme, Glory of Abingdon, Cerise Blanche, David, Roi de Siam, Triumph Royal, and Polyphemus.

Fourth prize, R. Headly, Esq., Stapleford.—Capt. Fuhelin, Gem, Menelaus, Calliope, Titian, Proserpine, Pactolus, Telemachus, and Aurora. Being all seedlings.

Fifth prize, J. Macfield, Esq., Hoxton.—Princess Royal, New Bizarre, Camus de Croix, Lady Stanley, Chillaston Beauty, Surpasse Catafalque, Polyphemus, La Belle Nannette, and Brown's Wallace.

Sixth prize, C. S. Crook, Esq., Brixton.—Royal George, Mountain Sylph, Vivid, Norman's William, Maid of Orleans, Crook's Mary, Purple Perfection, Triumph Royal, and May's Ulysses.

Recommended by Censors for a prize as equal to Sixth. Royal George, Cerise Blanche, Franeiscus Primus, Rose Astonishing, Vivid, Optimus, Lord Strathmore, Cleopatra, and Camus. P. Wallace, jun., Esq., Petersham.

PRIZES FOR SINGLE BLOOMS.—**Best Rose.**—"Bion." S. Sanders, Esq. **Best Byblomen.**—"Proserpine." R. Headly, Esq. **Best Bizarre.**—"Ulysses." A. Lane, Esq. **Best Tricolor.**—"Sultan." W. Dutton, Esq.

PRIZES FOR SEEDLINGS.—**Best Rose.**—"Regina." R. Headly, Esq. **Best Byblomen.**—"Adonis." R. Headly, Esq. No Bizarre seedling of sufficient merit having been produced, a second Byblomen, raised by Mr. Norman, of Woolwich, but not yet named, was recommended by the Censors for a prize.

APIARIAN'S CALENDAR—JULY.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

It appears rather extraordinary that bees should have done well this season, both far north and south, and not generally so badly in the Midland counties. A correspondent, writing from Cricklade, says, "I have never seen so much honey made in so short a time as between the 16th

of May and the 4th of June." Another, from Stanley near Wakefield, in Yorkshire, says, "I have six old stocks that I have kept through the winter, and not lost one; they are all in common straw hives of large size; the spring is very late with us, but my bees are forward, for I have already had five swarms—on the 22nd of May, the 23rd, the 25th, the 26th, and the 27th—and am expecting the sixth daily. I never had swarms so early before; for here, in Yorkshire, we expect to be two or three weeks later than you in the south." The "Country Curate" will say, and perhaps, with some truth, that the *large hives* cause the early swarms.* This is, certainly, one advantage of large hives, but it is questionable if the many disadvantages arising from them will not more than counterbalance it.

HONEY-GATHERING.—The honey-gathering has certainly been very great for the last week or two. I weighed a swarm on the 11th of June, which was put into a hive of old comb on the 3rd, and found that it had collected upwards of fourteen pounds of honey.

TAYLOR'S DIVIDING HIVE (for making artificial, or early swarms).—The construction of this hive gives facilities for its division into two equal halves; and it is fitted up with bars placed from front to back. Each half-hive has its own separate floorboard, which, when placed side by side, are kept together by a moveable tongue of wood inserted underneath. The junction of the boxes is further secured by a loose top, or centre-board, which is adjusted and pinned with iron pegs at the four corners to cover the whole. For practical use, it is requisite to have a duplicate set of boxes, viz., there must be *four* half-hives and boards, each one being so uniformly made as to fit on any other half.

The usual time for making or forcing an artificial swarm is about the period (generally in May) when the drone bees have become active, and when brood, or larvae, both of drones and common bees, is plentiful in the hive. On a fine day remove the connecting centre-board, and withdraw the wooden tongue from beneath the two half floor-boards, pass a thin knife-blade along the points of junction of the boxes to loosen the joint, but not so as to enter further than the thickness of the wood; then insert at the back one of the zinc dividing plates, allowing its flange to rest upon the upper edge of the half-box to retain the divider in its place; push it gently along, so as to cut off the communication from one half to the other; next insert the other zinc dividers, when the two full halves on their boards may be moved apart sufficient to admit of an empty half and its board being adjusted to each. Withdraw the dividing plates, and we have now two complete conjoined hives, each with one side full of combs and bees. One of them will, of course, contain the queen-bee, which may be ascertained by drumming on the boxes until the bees are in commotion; that hive in which the queen is will speedily become quiet, whilst prolonged confusion will prevail in the queenless box. The latter may be placed on the spot, or stand, it had previously occupied, where the bees will shortly rear themselves a sovereign, whilst the other hive, with the queen, is to be taken to a little distance.

The success of the dividing operation will depend mainly on the position of the combs; for if these should chance to have been worked across the bars, instead of in parallel lines, much trouble will result. Guide-combs must, therefore, be used previously to stocking the hive. The latter is best done by living a swarm into it, on which occasion the two halves should be well-secured together by a cord temporarily tied round them. I was favoured with one of these hives from Mr. Taylor, last year, in time to put a late swarm into it, which I kept alive through the winter; it is now doing pretty well, and storing honey very fast, but drones have not yet made their appearance; still, I hope, in my next Calendar, to be able to give a favourable account of the operation of *dividing*, and of having made of the *one two* good stocks. All that I can at present say is, that the bees have worked their combs very regularly upon the bars, which will make the operation very easy indeed.

BEES IN A NORTH ASPECT.—I should feel obliged if those persons who have tried the experiment of placing their bees facing the north would give me the result, and their opinion upon it.

* Our readers will regret, as we do, to learn that "A Country Curate" is gone to Australia.—ED. C. G.

THE CULTURE OF A ROD OF GROUND.

JULY.

My notes on the Vegetable Marrow being deemed worthy of notice in THE COTTAGE GARDENER, I am induced to offer a few hints on the operations necessary to be performed upon a rod of ground, &c. But being but a self-taught man in my humble pursuit, I have no pretensions to remark anything beyond what I have simply gathered from practice, observation, and study. Therefore, I trust every allowance will be made for the many errors I may commit in attempting to describe my system of cultivation.

I must here beg to digress a little from my subject, to inform the reader that I was originally trained to the counter, but that *effeminate* occupation not agreeing with my health, taste, or prosperity, I resolved to exchange the tiny yard stick for that manly tool, the digging implement; and although a formidable implement to handle, in comparison to the measure, yet, from the ten years experience that I have had, I am proud to say I have no occasion to regret the change; but, on the contrary, to rejoice that I have, by the aid of an all bountiful Providence, restored my health, which alone is of more worth than the wealth of a nation could bestow, and, in consequence, have been enabled to cultivate my two acres with my own hands, without experiencing a day's sickness during the above period, besides the many pleasures I derive from the pursuit, in comparison with the former occupation. Probably the reader will say, what has all this to do relative to the work to be done upon a rod of ground? I confess it has but little; but thinking there may be many similarly situated to myself, I have been induced to offer these few remarks by way of encouragement in such an undertaking.

Relative to the work to be done this month, I suppose the ground to be occupied with all the principal crops; therefore, the most important business to be attended to, is thorough tillage between the growing crops, and where the fork can be used with safety (for I never use the spade), to dig well between the rows of Swede Turnips, Cattle-beet, Cabbages, &c.; supposing all these crops to be in rows of sufficient width to admit of this operation. As the crops advance, and where the fork cannot with safety be used, I recommend the *Derbyshire hoe*. This simple tool I have found of immense service in working between the growing crops where the fork cannot be used. The following is a brief description of it:—"The iron part should weigh about a-pound-and-a-half, with a semi-circular neck hammered four-square, the spiko part five inches long, by one-inch-and-three-quarters wide, at the widest part, and narrowed from thence to the point; the face next the hand to be flat; the back to be ridged along the middle to full half-an-inch thick where the widest part is, and tapering from thence towards the sides and point. The handle about five feet long." An engraving of this tool, and also of my digging-fork, is given in my little work on "Spade Husbandry." They are made by the Messrs. Ransome's, Ipswich. I have another implement I use, called the *hand cultivator*, which I find to be very useful. I shall endeavour to give a description of this in a future paper.

As the ground becomes vacant, now is the time to plant out *Savoy*s, or any other *winter Cabbages*, likewise *Broccoli*. In the last week in this month, I sow my early *Battersea Cabbage* seed for early spring Cabbages, on the first vacant piece of ground. After giving it a liberal supply of manure, and a deep digging, I divide the land into beds four feet wide, and sow the seed in drills eight or ten inches apart; in this way the plants become much stronger than they would by being sown broadcast, and they require no pricking out previously to being transplanted where they are intended to stand. This is also the time for transplanting *Swede Turnips* or *Cattle-beet* on all vacant spots where the crop has failed, or on ground where early potatoes or cabbages have been taken off. The size of the roots, when set out, should be as large as a radish when fit for the table, or even larger. In this way I have had as fine crops as where the seed has been sown in the regular way. I have often been astonished that all vacant spots in fields have not been filled up in this way, where the seed has failed to come up, or been taken off by the fly. *Stone Turnips* may now be sown. A great deal of food may now be collected for pigs, by

stripping off the tops of beans, and by thinning the swede and beet crops. The *Vegetable Marrow* may still be set out where plants can be procured; the particulars I have given in a previous article.

I have tried experiments in growing *Sun-flowers*, these last two years, as food for poultry, which I find them to answer exceedingly well. I have grown them with my Swedes, Beet, Potatoes, &c., between every fourth row, which at such a space does not at all injure the other crops. More of these at some future period. Every attention should now be paid to collect all the manure possible for autumn use.

Since I have declined keeping cows, I am giving my attention to pigs, poultry, and bees. Respecting *Pig Stock*, I think a breeding sow, where convenience offers, is profitable for the cottager to keep, particularly at the present time, as pigs are selling well.

Those who have the convenience, I would recommend to keep *Poultry*, as a profitable stock, provided they are properly attended to. From the short time we have kept them, and the success we have met with, I am inclined to think there is no stock that would be more profitable to the cottager. So far as we have made trial, I prefer the *Shanghai fowl*.

It has been asserted by an experienced breeder of poultry, that "to feed an ox to one thousand two hundred pounds weight, usually takes five years, while the same weight of poultry can be made ready for the table in about three months, and at less than half the cost in food."

Where *Bees* can be conveniently kept they are very profitable in a favourable season, and ought to command the particular attention of the cottager. As they support themselves, all they require at his hands is the accommodation of a new hive when swarming, and a dry cool lodging for the winter.

In THE COTTAGE GARDENER of May 12th, in an article headed "Breeding Pure Chickens," it is stated of the Turkey hen, that a short time with the male is sufficient to fertilise the whole of the eggs laid previous to hatching. I have proved the above case to be a fact. Last season I took my Turkey hen to a neighbour's male bird, she remained with him only one day and night. She laid sixteen eggs and set on them. I had frequently remarked during the time that we should have no chicks. But as many asserted the truth of this, and others denied it, I was determined to try the experiment. When the time of hatching arrived, I went to see if I had any increase of live stock, and to my astonishment, when I lifted the hen, the nest was full of young turkies, for every egg produced a bird.—JOHN SILLETT.

TO CORRESPONDENTS.

DISEASED GOLDEN PHEASANT (*Scrutator*).—The pheasant forwarded died of scrofulous tubercles in the lungs, constituting consumption. A discharge of blood had occurred, part of which had been swallowed, and was contained in the crop. Consumption is the great scourge of delicate tropical animals reared in this country; warmth, with dry, pure air, and natural food, are only partial preventives. It is needless to say there is no cure. Extra carriage, 6d.—W. B. T.

SUSPENDED BASKETS IN A COOL GREENHOUSE (*Anne*).—See an article next week by Mr. Fish.

PEACH-TREES IN POTS GROWING TOO VIGOROUSLY (*J. Watkins*).—It is now too late to cut the shoots back to three or four eyes, unless you can give fire heat to ripen the young shoots. The strong shoots should have been stopped some weeks since. Even now it would be advisable to stop the points of the very strong ones, and when these put out laterals, remove them, and though thus you will start a number of buds on your shoot, those near the base will become more ripened and matured. If the growing should still beat the maturing principle, curtail the supplies at the root, just so as to keep the leaves from flagging. If there are a few extra strong shoots on each plant, these may be stopped, as you propose; or, if they could be done without, removed altogether, and the weaker shoots will gain the benefit. Your *Apricots* and *Plums*, with the side shoots pinched back to one inch in May. Quite early and short enough at that time; you will, probably, either make the leaders too strong, or have the pinching to perform again. We should have preferred doing it more gradually, and a month, or nearly so, later. Cutting back the breast-wood of *Cherries* and *Pears* the end of this month is all right, as soon as you like, but begin at the top of the tree, and come down several feet, and there stop; in ten days, take another yard away, and after a rest remove the lower division. Is the first of September the best time for planting *cuttings of China* and other allied *Roses*, &c.? Silver sand and hand-lights will help them, and they will do from thence to November; but they must not be moved until next spring. But the best time for propagating is just when the young shoots are three inches long, in the beginning of summer, as has been previously explained. Then placed under hand-lights, and in a slight hotbed, and in sandy soil, they are almost certain to succeed.

VARIOUS (*P. B.*).—Where should *Orange* and *Lemon-trees* be placed

out-of-doors in summer? First, in the shade, and then direct in the sun—that is, if healthy; if not, they had better not go out at all. They should always remain in-doors in summer when fruit is an object. Where should *Oleanders* be placed out-of-doors? After the shoots are grown they may have a slightly shaded position at first, and then, during the whole of the autumn, at least, they must be right in the sun, and the roots kept from deluging rains. Will the *India-rubber plant* stand out-of-doors in summer? Yes, in July, August, and September, but in a warm, shady place. Will any of the *Chamærops* stand out-of-doors? Yes, the *C. humilis* has stood out in several places, with but little or no protection.

VINE NOT BEARING (*R. L., Islington*).—These that make shoots three yards long every year, have a good border, and that well-drained, can hardly be barren from want of strength. Perhaps your shoots are too numerous, not shortened enough, and not sufficiently exposed to sun and air to ripen the buds. A well-ripened shoot, of nine feet in length, ought to produce a number of bunches next year; but, as you say that the shoots are from one to three yards long, we have a notion that there may be weakness in the Vine, and that your shoots may be more numerous than useful.

SPANISH CHICKENS (*W. B. I.*).—White down around the eye would certainly not be a less favourable appearance for the newly-hatched Spanish chicken than black. It is far too early, however, at that period, to speculate on the future excellence of this breed.

RHODODENDRONS (*Constant Reader*).—The best white, best dark purple, and best crimson Rhododendrons, of the *Catalwbiense* breed, to plant in clumps on the grass, are the following:—*Catalwbiense album elegans*, 3s. 6d. to 5s. each; *candidum*, another very good white, same price; *delicatissimum* and *Luciferum*, also the same, are all first-rate white sorts of that breed. *Perspicuum* is another very fine white seedling *Catalwbiense*, or say *Album elegans*, *Luciferum*, and *Perspicuum*, are the three best whites in this class. We marked them last year in Mr. John Waterer's collection, and also the following. The best dark purple is *Purpureum elegans*, 3s. 6d., good purples being scarce in this strain. The best crimson is *atropurpureum*, but it costs 5s., but it is the only really good purplish-crimson that we could select for a bed in this strain. The best scarlet Rhododendron of any class, for standing in exposed places, is *Victoria*, it is really a very fine flower, large compact truss. A clear scarlet shaded with purple, but the price was 5s. last year.

BULBS—BLIGHT IN.—*M.* says:—"On taking up my Hyacinths and Ornithogalums, I find long fleshy tap-roots, instead of the fibrous ones, which I presume to be most proper to these bulbs. What is the fault, if it be any, and how to be remedied? I conjecture that the first and best roots were destroyed by frost, and that the fleshy ones are emitted to supply their loss. Is it so?" No doubt of it, but there is no remedy; perhaps the bulbs are not much the worse, after all.

BARREN PEAR TREE (*Tired of Waiting*).—This tree is healthy, grows well, and flowers, but does not set fruit, and this is the tenth year, after planting, without any fruit, the owner not knowing whether it is a Jargonelle or Chaumontell. There can be no doubt, from the description, but the tree grows *too well*, and that is the sole cause of the blossoms not setting. The best plan would be to take it up at the end of October, make a *station* under it, as we often have advised, and spread out the roots fan fashion, but not deeper than ten inches from the surface; to mulch it the following summer, and to pay particular attention to our oft-repeated rule for *summer pruning* pears, and other spur fruit; and the next best plan is to uncover the roots, also in October (but it may be done now), and to cut the strongest of them back to from a foot to eighteen inches from the tree. If the roots seem few and far between, as is likely the case, cut one-third their number right through; cover up, and keep the breast-wood short for the rest of the season.

IVY NOT CLINGING (*Ibid.*).—Sometimes, when Ivy is propagated from flowering branches, it will not stick to a wall at all; the way to get over that is to cut it all back to *near the surface* of the ground, and the young wood will take hold and cling immediately to almost anything.

SIX ANNUALS (*A Subscriber*).—First of all, have you well considered how you are to use the six best annuals in "very small beds, and on grass?" If you have not, and take our selection, you may be put out more next year even than this. All well-meaning straightforward people can learn enough of gardening from books to make a garden a great source of pleasure to them and their friends. You can do no more now till the beginning of August, then let us hear from you again, and we shall arrange for the annuals, and for keeping the small beds quite full another season. Speaking too far out of season spoils such instructions.

BALD-PATED TUMBLER PIGEON (*A. R.*).—Mr. Dixon's description of the bald-pate pigeon (page 119), of "the Dovecote and Aviary," is concise and accurate; "Their name," he there tells us, "is derived from having usually the head, tail, and slight feathers white, with the rest of the body of some uniform colour." There are variations in colour, but the main point is that the head should exhibit a marked contrast to the body. The points required for Tumblers generally, a compact body, round head, and short bill, added to great distinctness in the colour of their feathering, are also essential for the bird in question.

COMBS TORN IN FIGHTING (*Ibid.*).—A Shanghai, with his comb injured to any great extent, from any cause whatever, would, at an Exhibition, contend at great disadvantage, though not, perhaps, be absolutely excluded from all chance of the prize.

SHANGHAI PULLET'S TAILS (*Ibid.*).—These, which at six weeks old had distinct tail feathers an inch-and-a-half in length, are not the birds that we should wish to see in our own yard. Pullets occasionally, and cockerels usually, have a short downy tuft where the tail eventually appears, but seldom anything more at the age you mention. *W.*

GAS-HEATING A GREENHOUSE (*A Subscriber*).—We know of no work upon this subject. It would be injurious to the plants, we think, used in any other mode than for keeping up a moderate heat in a small greenhouse by means of a hot-water apparatus, as given in our columns a few months ago.

GNATS (*A Subscriber*).—Smoke of any kind will drive away gnats. If you burn brown paper in a room where they are they will settle, and seem to become so stupefied as not to be troublesome again for some hours.

CURLING-UP OF ROSE LEAVES (*W. A. N.*).—If there are no insects on the leaves, and the curling still continues, there is something wrong at the roots; mulch over these, and give liquid manure twice a week. There is no cure for the *aphis*, but syringing with tobacco water, or fumigating with tobacco smoke, or capsicum.

BALM WINE.—*J. F.* would be much obliged by a recipe for making Balm Wine.

SHANGHAI COCKEREL (*F. C. Q.*).—The drooping tail and wings depending are symptoms, we fear, of the "consumption" (incurable) to which all animals from the tropics are liable here; but we cannot speak positively.

WEIGHT AND SIZE OF EGGS.—A distinguished Staff Officer gives us the following weights and measures:—"I have two black *Spanish* hens. They have for the last four months been running, with other hens, with a *Dorking* cock. The eggs from these hens are so large and fine, that I think some of your readers may be interested by a description of them. I yesterday weighed an egg laid a few days since (the largest I have yet had), the weight was *three ounces and 12½ pennyweights*. The enclosed papers show the circumference of the egg each way." The circumference lengthways, was 7½ inches; and the circumference of the largest part, 6½ inches.

CLASS FOUR AT CHELTENHAM (*E. Bateman*).—It may be that the "blackest" Shanghaes did not obtain the first prize; but colour is a very secondary consideration; form, size, and condition are much more important. We know that some of the best judges of poultry were quite satisfied with the decisions.

POULTRY AND HORTICULTURAL SHOWS (*E. F. and others*).—We are obliged by the Prospectuses, but it is only fair that if these shows are desired to be inserted in our weekly list, that they should be advertised at the least once in our other columns.

PRESERVING EGGS (*W. E. J.*).—We are informed, by good authorities, that eggs placed the small end downwards in a kind of rack or stand, bored full of holes just large enough to admit the end of the egg, will keep good for months, in a cool, dry, situation.

MR. CATTELL'S PRIZE SHANGHAI COCK.—Mr. Cattell informs us (June 16), that this bird then weighed thirteen pounds nine ounces, after travelling about 540 miles, and being confined nine days at the Cheltenham and Plymouth Exhibitions, and never having less than five hens with him when at home.

CONSERVATORY ADJOINING DRAWING ROOM (*Lora*).—The best advice we can give you is to call at Josiah Wilson's, Esq., Stonard House, Stamford Hill, and ask him to let you see his Conservatory. A short description of it is in our 47th number.

GAPES (*V., Malvern*).—See what Mr. Tegetmeier says to-day. The *Pip* is a very different disease, affecting the tip of the tongue. The *Funeral Cypress* we do not think is yet purchasable of Nurserymen.

THE BEST STRAWBERRY (*Ibid.*).—We take this opportunity of observing that it is perfectly impossible to answer such vague questions as "which is the best Strawberry," "the best Rose," or "the best Annual." There are many preliminary circumstances required to be known before the adviser can reply to such queries. If you will tell us when you wish the crop to be ripe—what is the nature of your soil—and whether you like a gratefully acid, or a rich-flavoured, fruit—then we will say which Strawberry will probably suit you.

SUPPLYING A FAMILY.—*F. B.* writes to us as follows:—"I should recommend '*Clericus*' to keep a sow of the Berkshire breed, selling the young pigs as soon as weaned, with the exception of two, to be killed when three or four months old. If '*Clericus*' brews at home, the grains are good for cows and pigs."

PANSEY (—).—The book you mention is not a good authority. Of what do you propose to make your *liquid manure*? Of sheep-dung, guano, stable drainings, or of what other fertilizer?

WILLIAM ADAMS.—C. is informed that the narrative is truth in everything but the name. If you will confide to us your name and address, "The Authoress of My Flowers" will, we have no doubt, furnish any particulars you need.

CALENDAR FOR JULY.

FLOWER-GARDEN.

ANNUALS (Tender), bring out from frames; dress; give fresh earth; stake and tie. ANNUALS, sow for autumn; transplant generally. AURICULAS in pots, dress and water judiciously; seedlings transplant; old plants repot, e. Box edgings clip, b. Bud roses, jasmines, &c. BULB-ROOTS, take up (see June); seeds sow. CARNATIONS, attend to (see June); shade and shelter during hot weather; water freely, and give liquid-manure. CHRYSANTHEMUM suckers separate and plant; layer. CUTTINGS of most herbaceous plants will root now, and of all the scarlet Geraniums, if planted on a south border, b. DAHLIAS require support and pruning. EDGINGS, clip. EVERGREENS, prune; seedlings, prick out. FLOWER-BEDS, stir surface often; train; stop and often regulate the plants, to get an uniform growth and bloom. GRASS, mow and roll often. GRAVEL, weed and roll. HEARTSEASE, plant slips, e.; water freely. HEDGES, clip. HOR and rare at every opportunity. LAYERING Carnations, &c., may be performed, b.; water freely; transplant rooted layers. LEAVES, decayed, remove as soon as seen. LIQUID-MANURE, give occasionally to flowering shrubs. MIGNONETTE, and a few other quick-flowering annuals, may be sown, b., for autumn. PIPING of Pinks, &c., may be still practised, b. PELARGONIUMS, cuttings, plant, b. POLYANTHUSES, seedlings, transplant; roots of old, part. ROSES, bud, layer, and make cuttings of, b. SEEDS, gather as they ripen. STAKE and tie up plants wherever necessary. TRANSPLANT, b., from the reserve garden in damp or dull weather. WATER freely, not only the roots, but over the foliage.

D. BEATON.

GREENHOUSE.

AIR, admit freely night and day, unless when stormy; make an exception, however, in those cases where growth is still desirable. There shut up early, and use the syringe morning and evening. BUD and GRAFT oranges, camellias, azaleas, climbers, &c. CINERARIAS, cut down, plant out-of-doors, or keep in pot, according as you wish to grow

from suckers, or merely by thinning-out, or dividing the old plants when growth has commenced. CUTTINGS, make and plant, placing them in cool pits at a distance from the glass, or in a mild bottom-heat, according to their requirements. Dress and keep everything neat. CALCEOLARIAS, give manured water; fumigate when necessary; cut down early blooming; thin the pods of those left for seed, as one pod will give hundreds of plants. Fine kinds done flowering, cut down and plant in light soil, on a north border; sow seeds of these and Cinerarias to have them early; for moderate early blooming in spring it will be time enough a month hence. GERANIUMS, cut down the forwardest; tie and train successions; prepare for early supply of cuttings; they will do better now stuck in an open border than two months hence in pits or frames. HEATHS, cut down and prune when done flowering; give plenty of air to those in flower; shift those starting again after being pruned; and propagate by seeds and by cuttings in a pit under hand-glasses. Examine all PEAT PLANTS as respects water, for if dried up several times death is next to certain; your only chance is to set the pot or tub in water until all is saturated, and then allow it to drain. All HARD-WOODED PLANTS must receive similar attention; the more sun they can stand now the rougher and colder the treatment they will stand in winter. SEEDLINGS of all kinds prick off as soon as up, or they will be apt to fox off at the surface of the soil. SHADE when necessary, especially things not well rooted; it is better in bright weather than more air or delugings of waterings. SHIFTING must be attended to with all successions, such as fuchsias, geraniums, balsams, cockscombs, &c., and free-growing, quick-blooming plants, as *Achimenes putens* and *coccinea*. *Tropæolums*, and other twiners and climbers, must be trained and fastened daily. One of the prettiest ornaments for a window is the *Tropæolum pentaphyllum*; when done flowering, keep bulbs in dry earth until they vegetate. WATER must now be given with great judgment, especially to newly shifted plants that have been transferred from a small to a large pot. In general circumstances, there is now as much danger from want of water as in winter there was the danger of giving too much, and giving it when not required. All bulbs that have finished flowering and growing are an exception; as soon as the leaves get yellow they should be encouraged to get into a state of rest as soon as possible by withholding water. Those that have their leaves yet green should be assisted with water until the bulbs are mature.

R. FISH.

FRUIT GARDEN.

APPLE ESPALIERS, train, thin, and stop. APRICOTS, pick off caterpillars, stop and train. CHERRIES, cleanse from fly and protect from birds. CUCUMBERS, thin and stop frequently, and reserve specimens for seed. CURRANTS (red and white), prune back all side spray and top. CURRANTS (black), water freely. FIGS, thin out the wood, and stop. GOOSE-BERRIES, exterminate the caterpillar; thin out where bushes are overloaded. INSECTS of all kinds exterminate. MELONS, train, stop, thin, set fruit, and water freely when swelling the fruit; also syringe on fine afternoons. NECTARINES, as Peaches. NUTS, remove superfluous spray from the interior of the bushes, also suckers. PEARS, remove waste shoots, stop, &c., according to advice previously given; thin fruit if too thick. PEACHES, make a final thinning of both fruit and wood; stop gross shoots wherever found. PLUMS, beware of the fly; stop, and thin. RASPBERRIES, thin suckers, and stop when more than five feet high. STRAWBERRIES, keep down runners, and water late kinds. VINES, remove extra laterals from those ripe, and continue stopping late grapes; water border, if dry and sound beneath, in dry weather.

R. ERRINGTON.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES, supply with water in dry weather; repot such as were not done in spring. CARNATIONS and PICOTÉES, shade from sun, and shelter from wind and rain; layer them as soon as the shoots are long enough. CINERARIAS, put in slips of as cuttings; transplant seedlings. CALCEOLARIAS, treat similarly. CHRYSANTHEMUMS, advance a stage by repotting. DAHLIAS, attend to tying; see the ties are not too tight; thin branches where too numerous; place traps to catch earwigs; look out for slugs, and if any are found water the ground with lime water; mulch freely, if not already done; and water abundantly in fine weather; put stakes to, if not done before. Cuttings put in of new and rare sorts; shelter the flowers when they open (See next month's Calendar). FUCHSIAS now in flower, supply liberally with water; repot such as require it. HOLLYHOCKS now advancing to flower, keep well tied to the stakes; mulch and water freely. HYACINTHS, take up, dry, and store. PANSIES, save seed from; layer; protect from adverse weather; put in cuttings; seedlings transplant where they are to flower. PELARGONIUMS, specimens of, cut down; give no water till they give over bleeding; put in cuttings; pot off those that have struck. PINKS, cut off decaying blooms; layer, and pipe—it is not yet too late. RANUNCULUSES, take up, dry, and store, e. ROSES, cut off all decaying flowers and flower-stems; destroy insects on, or the autumn bloom will be spoilt. TULIPS, take up, dry, and store, e. or b. WATER all florists' flowers in pots freely in dry weather.

T. APPLEBY.

FORCING HOUSE.

BORDERS, attend to. BOTTOM-HEATS, minimum 80°, maximum 90°. CHERRIES, secure from sudden changes, may sink gradually to rest; use a little liquid-manure. CUCUMBERS, water and stop regularly; beware of insects. FLOORS, moisten twice a-day. FIRES, try to forget at present. FIGS, be sure the root is moistened; stop every shoot when four or five inches. GRAPES ripening, give abundance of air of a dry character; succession crops give air and moisture; thin, tie, train, stop, &c. INSECTS, continue to destroy. LIQUID-MANURE, apply where needed. MELONS, sustain the foliage for a second crop; proceed as before with very late ones. MOISTURE, ROOT, see well to; in air, should be well kept up, except with ripe fruit. NECTARINES, as Peaches; neglect will prove painful in the end. PEACHES, stop, train, and thin foliage, to colour fruit; late crops, apply liquid-manure. PINES, *fruiters*, use liquid-manure, clear; sustain a bottom-heat of 85°; shut up hot and moist. PINES, *successions*, frequently sprinkle; shift boldly when requisite, and air liberally, to keep them sturdy. VINES, young, train carefully, stop frequently, and apply liquid-manure, if moisture be needed. VENTILATION, forget not by day, and all night if possible; be not niggardly. WATERING, attend to constantly.

R. ERRINGTON.

PLANT STOVE.

AIR, give most abundantly by day, and partially by night. AMARYLLIS BULBS that have done flowering, place in a cool house, to cause a state of rest. *Amaryllis* (*Hippeastrum*) *aulica*, pot, and plunge in heat. ACHIMENES PICTA, put into wide shallow pans, and start into growth. APHELANDRA AURANTIACA, pot and grow on, to flower in winter. BASKETS, any plant in, water freely, by dipping them in a cistern of well-aired water. BASKETS with drooping plants dip frequently. BEGONIAS, to flower in winter, repot and grow on freely. EUPHORBIA JACQUINIFOLIA, ERANTHEMUM STRICTUM, and ERANTHEMUM PULCHELLUM, require liberal treatment now, to cause them to bloom well in winter. BULBS done blooming, remove into a cool house, to induce rest. CLIMBERS, tie in, and keep clean from insects. CUTTINGS of various kinds of fist-rooting stove plants may be put in now successfully. CUTTINGS that are rooted, pot off, and shade for a few days. GLOXINIAS and GESNERAS done blooming, set out in the air in an open situation to induce them to rest; lay the pots on one side to keep off heavy rain. GESNERA ZEBRINA, repot to bloom in winter. IXORAS, give the last potting for the season to such as are intended for specimens; tie down, to allow the young shoots to spring up in the centre; stop these, to cause bushiness. MOISTURE, supply to the internal air liberally. POINSETTIA PULCHERRIMA, pot and place in heat, to start into growth freely. PLANTS (young), remove as many as possible into cold frames early in the month; this gives them a stout hardy habit, and helps to keep down insects, especially the red spider. POTTING may yet be done for all freely-growing young plants. RRST, give to all bulbous plants, and early flowering shrubby and herbaceous plants. SYRINGE, morning and evening, to keep down red spider, and to wash the dust off the leaves. WATER, apply in abundance to the freely-growing species, but withhold it from such as have made their annual growths.

T. APPLEBY.

ORCHID HOUSE.

AIR may yet be given freely, and moisture in liberal supplies, by wetting the walls, walks, and pipes two or three times a day. BLOCKS, syringe daily, except such as may have ripened their pseudo-bulbs; remove such into a cooler and drier house. DENDROBES, continue to grow on for another month; water them abundantly. INSECTS breed fast during this month: apply the usual destroying remedy quickly and effectually. The white scale propagates the fastest of any of its class: wash the plants infested with it with a strong soap water worked into a lather, and laid on warm, but not hot. SYRINGE all the plants daily during the month, excepting it should prove cold and cloudy; let every part be kept neat and clean in every plant house. TOP-DRESSING; during this month go over all the plants, sponge the leaves, and top-dress such as require it. WATER freely all growing plants, but as soon as the new pseudo-bulbs are fully formed, withhold water, and place the plants in a cool house.

T. APPLEBY.

KITCHEN GARDEN.

ALEXANDERS, earth up in dry weather. ARTICHOKEs, attend to. ASPARAGUS, discontinue cutting; keep clean from weeds. If salting has been attended to, none will appear; but earth-stir with some pointed instrument. BEETS, see that these are well thinned out; use the hoe freely. BROAD BEANS, save seeds from the best kinds; a small planting may be made of the *Early Mazagan* kind in an open south border, and well watered at the time of planting, should the weather be dry. BORAGE, sow, and thin out a foot apart. BROCCOLIS, plant out and prick out; in all cases well water at the time of planting. BROCCOLIS, treat the same. CABBAGES, plant out; sow seed about the 20th of the month, in an open situation, should the weather be dry, well water previously to sowing. CAPSICUMS, earth-stir among frequently. CARDOONS, attend to earthing-up, &c. CARRAWAY, collect seed, &c. CARROTS, see that all are well thinned out, and use the hoe freely among them. CAULIFLOWERS, plant out; supply those that are forward in growth with plenty of water; invert a few leaves over the heads of those turning in. CELERY, plant out in earnest, and attend to earthing-up forward crops, and look after seed as it ripens. CHAMOMILE, keep clear from weeds, and collect flowers. CUCUMBERS, attend to daily, as to thinning, topping, training out, top-dressing and watering. The hand-glass crops, fork up the earth round about their roots, allowing them sufficient room to run out freely. ENDIVE, of both sorts, make a good sowing toward the middle of this month, and plant out previously sown plants. GARLIC and SHALLOTS, take up and dry off for winter use. HERBS of any kind, cut and dry when in bloom. KIDNEY BEANS (dwarfs), at this late season, should be sown in open, warm borders. KNOTTED or SWEET MARJORAM, attend to earth-stirring. LEEKS, plant out, b. LETTUCES, sow or plant out, tie up in succession, and seed look after. MELONS, attend to earthing-up late planted-out crops; do such work in the afternoon; shut up close; setting the fruit is best done about 10 or 11 o'clock in the forenoon; give plenty of air to those ripening off their fruit; be sparing of the water among the ripening fruit. ONIONS, well thin out, weed, and earth-stir; press down stiff-necked onions as they advance in growth. PARSNIPS, use the hoe freely. PEAS, at this late season, sow early kinds in warm situations; well water at the time of sowing in dry weather; save seed from the best favourite kinds. In all kinds of PLANTING-OUT, take advantage of dull weather, and water well at the time of planting. Make good use of THE HOE in dry weather, in cutting down weeds and earth-stirring. We never like to see the rake used much in the kitchen-garden. RADISHES, sow where required. SALSIFY and SCORZONERA, thin out, and hoe among, h. SAVOYS, plant out. SEEDS of all kinds look after, and collect as they ripen. SPINACH, sow in succession, and thin out. SWEET BASIL, earth-stir among. TURNIPS, sow in succession, and attend to thinning-out; use the hoe freely among them. Particularly attend to planting out this month; water, and use the hoe. VEGETABLE MARROWS, train out and thin out.

T. WEAVER.

WEEKLY CALENDAR.

M D	W D	JULY 7—13, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
7	Th	Bedford Blue; clover.	30.005 — 29.914	90—49	E.	—	54 a. 3	15 a. 8	9 a. 24	1	4 32	188
8	F	Red-bellied; Clearwing; g.	30.026 — 30.016	87—51	E.	—	55	15	9 56	2	4 42	189
9	S	Pebble Prominent; trees.	30.020 — 29.995	92—54	E.	—	56	14	10 23	3	4 51	190
10	SUN	7 SUNDAY AFTER TRINITY.	30.117 — 30.034	87—53	N.E.	—	57	13	10 43	4	5 0	191
11	M	Red Arches; oaks.	30.127 — 30.070	81—57	S.E.	—	58	13	11 2	5	5 8	192
12	Tu	Black Footman; oaks.	30.100 — 30.049	79—56	E.	—	59	12	11 19	6	5 16	193
13	W	Nut-tree Tussock; wood s.	30.060 — 30.026	81—59	E.	—	1V	11	11 36	7	5 23	194

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 74° and 52.5° respectively. The greatest heat, 92°, occurred on the 13th in 1834; and the lowest cold, 39°, on the 8th in 1850. During the period 116 days were fine, and on 66 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 213.)



FUMARIA CAPREOLATA: Ramping, or Tendriled Fumitory.
Description.—It is an annual. Leaves glaucous; their

tendrils-like stalks twisting round other plants, by which the branching stem climbs to the height of three or four feet; leaflets wedge-shaped, three-lobed, and the lobes two or three-cut; flowers pale pink, though the tip of each petal is deep red. Flowers in lax clusters, the pods are single-seeded, not abrupt, or inversely heart-shaped, but more globose, with a slight depression at each side of the place of the style, which is deciduous, like that of all the single-seeded Fumariae.

Places where found.—Gardens and cultivated grounds; not common.

Time of flowering.—June to September.

History.—This was first described as a species by Casalpinus, under the title of Fumaria altera, and by our Ray as Fumaria major scandens (Larger climbing Fumitory), but he says that he was first led to notice its climbing habit by Jacob Bobart, at that time curator of the Oxford Botanic Garden. Even Dr. Martyn, and other modern botanists, have doubted whether it is more than a variety of Fumaria officinalis. Smith, Withering, Decandolle, and other recent authorities, with whom we agree, have maintained it as a distinct species. It differs from F. officinalis in the whole substance of its herbage, being more tender, the stem more spreading, twisting at the extremities, and never standing erect without a support; in the clusters of flowers being almost always lateral, and very short; in the leaves being on longer foot-stalks, and in these doing the office of tendrils, and even sometimes, but very rarely, terminating in small weak tendrils. (Smith. Withering. Martyn. Ray.)

ON June 29th, a Meeting of the Gardeners' Benevolent Institution was held at the rooms of the Horticultural Society, in Regent Street, for the election of three pensioners, Dr. Lindley in the chair, when Mr. Snow, Mr. Green, and Mr. Mearns, having polled the largest number of votes, were elected pensioners on the funds of the Institution.

Dr. Lindley announced that £300 would soon be added to the funds of the Institution from the sale of the Stanwick Neectarine, which the Duke of Northumberland, as we announced long ago, had set apart for that purpose.

An animated discussion took place between Dr. Lindley and Messrs. Charlwood, Lea, Cutler (the Secretary), Snow, and Beaton, about who ought, and who ought not, to be first elected as pensioners. Dr. Lindley and Mr. Beaton insisted on it as a principle, that those gardeners who have subscribed to the funds of the Institution, if they were candidates, should be elected in preference to non-subscribers. The Secretary and Mr. John Lee were decidedly opposed to this suggestion. Mr. Charlwood insisted that the by-laws did not require donations to the Institution to be funded like life subscriptions; and as these questions are likely to be still further mooted, we think it right to mention them.

Messrs. Lee, Beaton, and Denyer, were the scrutineers; and after some votes of thanks were passed the meeting broke up.

We are sorry, at all times, to differ from Mr. Beaton, but we still maintain our opinion formerly expressed, that those applicants ought first to be elected as pensioners who most stand in need of assistance. If, indeed, we can suppose it ever to happen that two candidates are equally balanced in destitution, then we should give the preference to him of the two who had subscribed; but let it be never forgotten that this Institution partakes in no way of the nature of a Benefit Club. It is a charitable Institution, founded for the relief of decayed Gardeners; and it is the duty, we think, of those who sustain it, to vote for the candidates most in need of its aid. Did not this rule prevail in the case of Mr. Mearns? However, whichever rule may be considered as entitled to influence the voting, it is an admirable Institution; and we will conclude with an extract from the speech of Samuel Laing, Esq., M.P., when presiding as Chairman at its recent anniversary dinner—

"The CHAIRMAN rose to give 'Prosperity to the Gardeners' Benevolent Institution.' As many present might not be fully aware of its nature and objects, he would briefly explain them. The Society originated in 1838, and, like

most other great and good things, by the earnest exertions of a very few individuals. Those individuals proceeded upon a very wise principle, namely, that in an institution of this kind the main object should be, not so much to keep up a fund for charitable purposes merely, as to stimulate the principle of self-denial and economy on the part of those who constituted its members. There were two or three peculiar features in the institution, to which he would call attention. The first was the rule which provides that none but gardeners who have subscribed fifteen years consecutively to the funds of the institution, or their widows, shall be considered eligible while a sufficient number of such fifteen-year subscribers are on the list (the object being to give a decided preference to those persons who have been contributing to assist others), so that if the funds should enable the committee to call for the election of five persons, and there were two or three candidates who had been subscribing fifteen years, such persons would be appointed pensioners in preference to the other candidates who had not subscribed for so long a period, or who had not been subscribers, and the election would be for the remaining number to make up the five. Another most excellent rule was the seventh, both as encouraging domestic affection, and removing an obstacle often felt by working men in the way of joining similar institutions, namely, that in the event of their own death, no provision is made for their widow. The rule in question provides that, in the event of a pensioner dying and leaving a widow, she shall, on producing the proper testimonials and certificates as to age, character, and marriage, and answering any other requisition to the satisfaction of the committee, be placed upon the list of pensioners without the trouble and expense of an election. The great and immediate object of the Society, therefore, is to provide pensions for necessitous gardeners and their widows, at the scale of sixteen pounds per annum to males, and twelve pounds per annum to females. As before stated, the Society had to endure at its commencement a long and ungenial spring. The first gleam of sunshine which broke upon it was when the Duke of Devonshire, at the suggestion of Sir Joseph Paxton, mentioned it to Her Majesty, and she, with the public spirit which has characterised her reign throughout, consented to become its patroness, and presented it with a donation of fifty pounds. From that time the career of the Society has been one of uninterrupted prosperity. At the same time, it should yet be regarded as only in its commencement. When we consider the number of gardeners receiving respectable wages, and able to support the institution, we must feel that the number receiving pensions (thirty-three), though large in respect to the amount of suffering actually relieved, is quite inconsiderable compared with what we may hope to achieve in a short time. What was the object for which they were there met together? To the eye of a superficial observer, to eat a very excellent dinner, drink some very good wine, and spend a very pleasant evening. But one who looked below the surface would see they were doing much more—in fact, playing a very important part in the institutions of the country, because he (the chairman) believed that the practice of meeting together in public, for these public dinners in support of charitable institutions, really played no inconsiderable part in the prosperity of those institutions. The practice is only a single instance of what pervades the whole framework of British society. Though not an old man, he could recollect when things were very different—when there was much animosity among different classes—when the working classes thought the middle classes were their enemies, and these looked with similar feelings upon the aristocracy. Now it was a matter of daily occurrence for members of the aristocracy, connected with some of the oldest families in the country, to meet on occasions like the present with members of the different professions, and those who have raised themselves from a humble position in society, some by the labour of their hands, others by the labour of the brain and the pen, on terms of the most perfect and unassuming equality, to strive together for one object, feeling themselves united in one common work. What is most remarkable is, that this fusion of parties has taken place when the working classes have been rising most rapidly in that knowledge which is power, and, therefore,

political power—when the democratic element of the state has been extending itself with the greatest rapidity. Instead of this leading to embittered feelings and hostility, we find ourselves more cordially disposed towards the aristocracy than at any former period of British history. Anything which contributes to such a happy result is of great political importance, and 'I do believe,' said Mr. Laing, 'that the numerous public dinners which take place in the City of London have no inconsiderable share in the work, by breaking through the reserve natural to Englishmen, making them understand each other, and making them act together to cement our institutions into one harmonious whole.' Nothing in English institutions and customs strike foreigners more than the blending of classes at our dinners. A foreigner had declared to him (the chairman), that of all our institutions he envied us none so much as our public dinners (laughter and cheers). If all this was true of public dinners in general, much more was it true of that at which they were then met. They were assembled to sing a sort of triumphal song in honour of the noble science of horticulture. There were many considerations which must make them feel that gardening had a peculiar claim upon their support. First, its antiquity, as practised by our first parents in Paradise; and then what carried more weight with him as a man of progress, was its universality. It comes home to every man. Nothing had struck him more when travelling by railway over some of the more crowded and poorer neighbourhoods of the metropolis, which presented a complete chaos of bricks and mortar, reminding one almost of Dante's *Inferno*, than, in looking down from the windows of the carriage, to see everywhere a Geranium blooming, or some other plant—some symptom of taste for the natural beauties of creation—an evidence of capability for better things if the opportunity were only afforded. Sweep away the art of the gardener, and you deprive the people of the only glimmering of beauty it is possible to bring before them. Gardening, moreover, is thoroughly and peculiarly English. In travelling on the Continent, nowhere, except in Holland, do we meet with anything like an English cottage-garden; and it would be hard to say how much of the pre-eminence of England in arts and manufactures may be due to the habits of industry and order developed and derived from the taste of her people for gardening. Horticultural fêtes are the most popular of all our English exhibitions. Other fashionable amusements are continually varying. One year we have the polka mania, and everybody, old and young, amuse themselves with turning round and round to the sound of a cornet-à-piston; another year, instead of turning themselves, they set the chairs and tables turning. But however we may for a time amuse ourselves with such fancies, we always come back in the long run to gardening; of that we never get tired. There was another view of the subject to which he would call attention. The great movement which is now going on is a movement for the elevation of the working classes. He looked upon the gardener as the *beau idéal* of a working man. The intelligent gardener possesses, necessarily, an amount of intelligence which places him on the highest level that can be attained by those who live by the labour of their hands. How important, then, that he should not be behind in setting an example to his fellow-workmen of that economy and self-denial which may enable them, during health and activity, to provide for the contingencies of want and old age. One good result of the recent gold discoveries he believed would be, to lift the working classes to such a position that they had only to know and take advantage of it to do almost what they liked. If they can only be brought to feel that economy and self-denial are virtues, the right step will be taken, and the only step necessary to raise them higher in the scale of civilization. Physical difficulties, it is to be hoped, are at an end. If a man cannot get work at home, he can get it by going abroad. He hoped he should never again see the time when a man, able and willing to work, should go about seeking employment, and be unable to find it."

WE have numerous communications from various districts of England, the latest dated the 25th and 27th of June, all concurring in the statement, that "at present

there is no appearance of *the Potato disease*." It is too early yet to form any conclusion even as to the probability of its appearance or non-appearance. From Cornwall, where vegetation is forwarder than in any other district, we received Potato apples, or berries, about half-grown on the first date above-mentioned. They were from a gentleman residing near Helston, in that county; and the accompanying note states as follows;—

"In this part of Cornwall the Potatoes are looking well—better, on the whole, than for some years past: no murrain at present, although it is too early to cry 'all right;' the general crop being now in blossom. I have taken up some Potatoes for ten days or a week quite free from disease, both in tuber and haulm, and good berries formed. Enclosed I have sent you two berries, which I think you will say are all right. I shall to-day try a few Potatoes dried at 140°, for a short time, and then plant."

From another district, and on the 27th of June, we received the following:—

"As you have requested your readers to inform you of the state of the Potato crop in their different neighbourhoods, I have pleasure in stating that in the neighbourhood of Hungerford, in Berks, an experienced judge says there never has been a more promising appearance, and for some years past not by any means so good a one at this date. The disease has slightly shown itself in the plants grown *in frames*, both in the gardens of the Countess of Craven, at Highclere, near Newbury, and of F. Popham, Esq., of Littlecot, near Hungerford; but the open-ground crops everywhere within the neighbourhood are perfectly free from it, and remarkably healthy in appearance.

"As you ask for, and encourage your readers to offer, any information on gardening subjects that they can vouch for with confidence, I venture to give you two experiments which have been tried with complete success by Mr. Robert Criswick, a clever and experienced gardener residing in the parish of Kintbury, in Berkshire. Three years ago he discovered that a bunch of green furze, placed in the middle of a gooseberry bush infested with caterpillars, had the effect of driving them completely away. Last year he tried it again with the same desirable result; and this year, having experienced similar effects, he has expressed a wish that it should be made known in your widely circulated Journal, which I am very happy to do. I have myself seen the bushes, with some of the lower branches stripped of the leaves, but the insects departed, and the rest of the bush in full vigour, with the bunch of furze lying in the middle. Mr. Criswick thinks that the unpleasant smell arising from furze when dying may be the cause of this simple but most effectual remedy.

"Mr. Criswick has also practised, with good effect, the following remedy for the fly in turnip crops:—He mixes black sulphur in water, in the proportion of one quarter of a pound to a bucket of water, and with a little bough flicks and sprinkles the leaves of the crop with this mixture. The above quantity will be sufficient for a quarter of an acre. He wishes this experiment to be made

known also, as it has proved quite successful, and may be of great use to Cottage Gardeners, and others with small pieces of land, where such a process could conveniently be carried on.

"I ought to state, in connection with the subject of the gooseberry blight, that Mr. Criswick's bushes have been well sprinkled with lime, but in none have the insects disappeared except where the furze bunch is placed.
R. F. J."

GLEANINGS.

HITHERTO, fruiting Grape Vines in Pots has been considered one of the most difficult efforts of fruit-culture, and even now it requires more attention and judgment than in obtaining fruit from a Vine planted in the border.

The first efforts at this pot-culture were made by Mr. G. Stafford, in 1831, he being at that time gardener at Willersley Castle in Derbyshire. He wrote upon the subject in the *Horticultural Register*, and since then we have had published the practice followed by Mr. Mearns, Mr. Spencer, Mr. Elliott, and others, but by none is this pot-culture made easy so well as Mr. Elphinstone in a little shilling volume entitled *A Treatise on the cultivation of the Vine in Pots*. Mr. Elphinstone is Gardener to Sir R. J. Adams, Bart., at Flixton Hall, Suffolk.

This Treatise is plain and practical, so that any one, even the merest tyro in gardening, can understand the whole course of culture from planting the bud to ripening the fruit. We will give one extract as a specimen:—

"TO FRUIT A POT VINE THE FIRST SEASON FROM THE EYE.—Many, even gardeners, doubt the possibility of fruiting a Vine the first season from the Eye, but it is to be done, and has been repeatedly done by me, and in this wise;—when they are shifted into twelve-sized pots, and grown about eighteen inches in height, select some of the most vigorous, and pinch off the top, treat them as the others, as to liquid manure, syringing, &c., stop all laterals as soon as they appear, pulling them entirely away from the axil of the leaf. The consequence of this will be, that the buds formed for next season's fructification will swell and break, and if well grown will at the fourth joint show fruit. Stop one joint beyond the bunch and all subsequent laterals and tendrils, thin out the bunch or bunches, give liberal soakings of clear liquid manure until they have swelled their full size, when it must be given more sparingly. I have in this way cut good bunches of Hamburgs and Muscats in September, that is, within seven months from the insertion of the Eye.

"The sorts I recommend for Pot Culture are the following:—viz. *White Frontignan*, *Black Hamburg*, and *Muscat of Alexandria*."

COVENT GARDEN.

THE most attractive feature now in the Market are the *Strawberries*, which, during the last week, have come on, as it were, all at once; and the consequence is, the number of visitors is so great as to create a complete stoppage in the passage of the centre arcade. Of all attractions in this quarter there are none which act more powerfully on the popular taste than the fruit. The *Strawberries* are remarkably fine, large, well grown,

and well coloured; and it is amusing to observe the amazement with which they are regarded by foreigners; calling up such exclamations as *Mon Dieu! Sacre!* The sorts which have been most general are *Keens' Seedlings*, but now we have the *British Queen*, which, for its splendid flavour, is not likely soon to be surpassed. We have observed a few of the old *Roseberry*, but very few; the larger growing varieties have well nigh expelled it. Still, however, it is not altogether to be lost sight of as one of the best for preserving. The prices which *Strawberries* are making is from 6d. to 9d. per pottle, and 9d. to 1s. per punnet. In the *punnet* you are not so likely to be deceived, as you have a better opportunity of examining the fruit; but in the *pottle* you can never tell what there is at the bottom of the long funnel-shaped basket.

There have been large arrivals of foreign *Cherries*, which are neither ripe nor sound; however can people be so infatuated as to encourage this kind of trade? Still, unripe and half rotten as they are, they make, wholesale, from 2s. 6d. to 3s. per dozen pounds, and 6d. per pound retail, in some cases 9d. We have had a few Kentish *Maydukes* in, but they cannot be called ripe. In the fruiterers' windows are still fine specimens of *Black Tartarians*, forced, which make from 1s. 6d. to 2s. 6d. per pound, and well worth all the money. *Green Gooseberries* are very abundant, indeed, the salesmen hardly know what to do with them, even at 1s. per sieve. *Melons* are plentiful, at from 2s. 6d. to 5s. each. *Grapes*, 3s. to 5s. per pound. *Peaches* and *Neectarines*, 12s. to 20s. per dozen.

VEGETABLES are also plentiful. *Peas* are very plentiful and good, the *White* sorts make 1s. 6d. to 2s. per bushel, and the *Blue* 2s. to 2s. 6d., at which prices there is a ready sale. *Old Potatoes* being bad, and the new, generally speaking, waxy, from remaining so long out of the ground, causes a good demand for *Peas*. *New Potatoes* are plentiful, and make quite as good prices as last week. *Cabbages* are making from 6d. to 1s. per dozen. *Cauliflowers*, 2s. per dozen. *Rhubarb*, 2d. per bundle. *Asparagus*, 1s. to 3s. 6d. per bundle of 100.

There is a great profusion of FLOWERS of all kinds. *Roses*, *Fuchsias*, *Mignonette*, *Ericas*, *Cinerarias*, and, in short, some of every thing now in bloom may be found here.

H.

SEA-KALE.—No. 2.

(Continued from page 218.)

I MUST now point to the forcing of this dainty vegetable, so as to have a constant succession on the table any day between the middle of November and the period—say the beginning of April—when it comes from the open ground. According to the old adage, "Many men, many minds," and it is thus with Sea-kale forcing—no old practitioner likes to be bounded by dry rules. This being as it should be, I shall certainly not assume the office of dictator. I will simply detail the mode by which, for the last half-score years, my worthy employer's table has been constantly furnished at the periods above stated; and I think I am justified in adding, almost without the intermission of even half-a-dozen days at any one period within those bounds.

My last paper, it will be remembered, wound up the out-door cultivation, leaving off at the point where all the stocks intended for the forcer were taken up, and "heeled," as gardeners have it—that is, buried close together overhead in soil.

It is now hard on twenty years since I put my employer to the charge of a Sea-kale blanching pot. The remains of these antiquated things are still here, and I have found a very good use for them at various periods. I have reared early cauliflowers under them in spring, and have frequently given them the important office, through November and December, of protecting groups of Bath Cos lettuces for a late salad bowl.

I should not, however, advise our readers to have such toys made specially for such uses; yet, in this respect, they at least beat the old spinning-wheel. We have here a mushroom-house about twenty-five feet long, and on one side of this is a narrow box, like a corn-bin, about ten feet long, by some thirty inches in width. In this little hole all the Sea-kale before adverted to is forced: having this little box properly occupied, our family seldom demand forced Kale in vain. Twenty-six years since, when I first set foot here, I found, on the 1st of March, a bed of Kale under forcing, 120 feet long by six feet wide, and this bed was piled over with hot dung and leaves from the park, to the depth of three feet from end to end. Coming, as I did, from the purlieus of Wimbledon Common, I really was startled at this array. We certainly used to get a few loads of horse-chestnut, elm, lime, and other leaves, now and then; but such a mass, and much of it oak-leaves, showed a degree of John Bullism I was not prepared for. However, fine as it all looked, and hot as a stew-pan, you might have spent two hours in hunting out a dish of Kale. It was, indeed, a most ceremonious affair. An old fellow who served the kitchens, and whose portrait would not have disgraced the frontispiece of "Talpa," was a tremendous Sea-kale hunter. Armed with a bunch of twigs, he would sally forth, pikel (*alias* fork) in hand, regardless of the pelting storm, in search of a dish of Kale. The bed being wide, poor Tom was obliged to take Joe with him, and routing this burning mass to the very bottom, you might have seen these persevering men, one on either side, hunting out the Kale. What was ready, if any could be found, was, of course, all but ready cooked. That which promised to come next, if the heat would let it, was signalled by a twig with two notches cut in it; and those crowns which had escaped utter destruction, and were actually vegetating, had a stick with one notch; the indecisive ones were left to their fate. Surely this was perseverance.

This sort of game was played for another year or two, only in the descending scale; and, in the meantime, I felt assured it was all perfect nonsense. Having studied "Knight's Physiological Papers," and closely watched the pages of Loudon, who then, almost single-handed, pointed to progress, I felt assured that there must come a better, a more economical, plan than the Sea-kale pot; in fact, the rising demands for fermenting materials for other purposes alone forced the question. I will pass by the intermediate grades by which I have arrived at a satisfactory course of practice, and proceed to the present position of the question.

The bin where the crowns are forced is about forty inches in depth; it rises about half-a-yard above the floor-level. The droppings from hot manure is the material used for heat; and it is my practice, at all times, to shake over what hot manure I can get hold of honestly; and, in shaking, to disengage some of the most powerful of the droppings. These are considered a prime article, not to be used in every-day affairs. Such droppings are placed about two feet deep in the bin, which has a lid, but they are slightly fermented previously. This bin holds about three, sometimes four,

batches of roots, and the droppings are, of course, placed as far in length as needed. The roots are placed at once on the droppings, but we ease over the droppings first with about three inches of half-rotten leaves. The crowns are placed as close as they can be packed; this requires a little handiwork, and then some finely-riddled old tan, or leaf soil, is strewn over the surface of the bed, not quite reaching the collar of the crowns. Nothing more is done for about three days, when the heat generally becomes a little too strong, and water is applied until it is sufficiently reduced. This may seem a somewhat indefinite proceeding to those unacquainted with the practice, but we find no difficulty in accomplishing our aims with facility by such ordinary means. In applying this water, we take care to secure a double purpose—not only to lower the heat to the desired point, but to cause the loose tan on the surface to subside into every crevice among the roots, and this is effected by using the spout instead of the rose of the watering-pot; the soil is, in fact, battered in, and the crowns are left protruding about three inches above the soil. The lid is now shut down and all is darkness. We thus proceed successively through the winter, introducing about a dozen strong roots once in two or three weeks, and just pursuing a similar routine.

In general, we have three sets of roots at work at a time; one set in full cut; a second just rising; and a third recently introduced. Some care is necessary in cutting the Kale for use, as the crowns being so close together, the sprouts arise in a somewhat mixed or confused state, and are apt to cross each other. We generally use a candle during the cutting, and it requires a careful hand to avoid false cuts.

When the Kale is in full cut, or shortly after, much of what the market gardener would term "sprue," springs up around the crowns, and if not pulled away produces confusion. This should be destroyed betimes. The watering to reduce bottom-heat may have to be repeated after the first cooling; this, however, is a mere matter of ordinary caution; and as to the character of the heat best adapted, I would say, any point from 60° to 70° will force Sea-kale well, but by all means let a dead stand be made at 80°. I find it necessary to use a high stimulus, with regard to bottom-heat, to the Kale introduced in the end of October, and the crowns should be strong indeed, and those earliest ripened. It is difficult to rouse the slumbering vegetating power the moment the plant has assumed a rest condition; it is quite uphill work; nevertheless, it can be done, and done with success. But low temperature will not accomplish this when time is precious. I have found a temperature of nearly 80° of immense service to those crowns introduced in the end of October; as soon, however, as the buds have sprouted about a couple of inches, this high temperature must be lowered, or the produce will be weakly.

It is necessary here to observe on atmospheric temperature, as regards its relation to the bottom-heats adverted to. I have always found that an air-heat exceeding 60° has a tendency to spoil the Kale, to render the shoots too attenuated, though, at the same time, the bottom heat may range from 70° to 80°. As a general maxim, it may be taken that the more moderate the air-heat the better, so long as it is never lower than 50°. Here, then, it will be seen how the old out-door blanching mode and this practice are at issue; by the old plan the air-heat exceeded the bottom-heat; by my practice it is exactly the reverse.

But all is vain without high culture out-doors; strong, sound, and well-ripened crowns *must be had*, or the best forcing practices must fall through. R. ERRINGTON.

NAMING NEW PLANTS, AND CROSSING OLD ONES.

I HAVE had letters from two first-rate London nurserymen this week—one from Mr. Henderson, of the Wellington Road Nursery, telling me that I mistook the name of his very beautiful cross-bred Geranium, *Glaucum grandiflorum*, a seedling from the old white African *grandiflorum* by the pollen of *Glaucum*, another old one from Africa, according to the established rule of giving the parentage of cross seedlings by compound words, as will be seen in answers "To Correspondents." The second letter was from Mr. Lowe, of the Clapton Nursery, relative to another most beautiful seedling—a scarlet *Gloxinia*, with the richest crimson throat that has yet appeared in this genus, and with a light inside dotted like the inside of a purple *Foxglove*. This new addition to our cross seedlings is to be called *Charles Dickens*, a popular and easily-remembered name, and it is for that that I mention it in comparison to the unmeaning phrases which are now so commonly used in naming seedlings.

It has been a common complaint for years, that nurserymen and florists use the same terms in naming popular garden crosses that are in use among botanists for wild or botanical plants. There is only one case in which such way of naming is at all admissible, and the example has been set us by botanists themselves—namely, when distinct varieties appear in a state of nature, or arise from an improved cultivation. The *Campanula* gives us as good and as old examples as any. A beautiful blue bell is found, and named; a white one comes next, and there is no difference in the two except colour, and that is not thought of sufficient importance to make two species—so the second is called *glomerata alba*, or *persicifolia alba*, as the case may be. After them come a double blue one, and a double white, still the doubleness is the only difference from the first one, and the first name is extended accordingly to *double blue*, or *double white*, so and so. This style of naming really assists the memory, and makes no confusion; therefore, is not only admissible, but very desirable. I once named a beautiful seedling of my own on this plan—the bedding Geranium *Dialedmatum regium*, one of our best bedders; but I was pulled by the nose for issuing a botanical term for this new form of *Dialedmatum*, but precedents are numerous, and I hold that such a term is far better than making a new name. Mr. Cole, a clever florist, now holding a nursery of his own near Birmingham, named my *Punch* and *Judy* Scarlet Geraniums the same day, without my knowledge, when he lived with me at Sir W. Middleton's. It was on the occasion of giving cuttings to a family who were on a visit, and once the name went out of the garden I could not cancel it, the naming of plants being on the principle of first come first served, and the first name must take the lead, to keep down confusion. So I was in the dumps about *Punch* and *Judy* until the following season, when the Duke of Bedford was on a visit to Shrubland Park, and when the Duchess of Bedford admired those seedlings, I apologised for the names, but her grace declared they were the two best names she had heard for years, and the reason was that any lady could easily remember them, and, no doubt, that is the grand secret in naming seedlings. Every popular name given in this country ought to be easy enough for a school girl to pronounce it without being taught to do so, and then should be so short as to be easily remembered. Of what use is it that we who write for THE COTTAGE GARDENER have brought down our terms and language to simplicity itself, so that all may understand, if we are to be crossed, day by day, with the silliest and most stupid names that any body can pick up from the French or German, on the

one hand, or from bastard Latin on the other, to confound and puzzle the whole world? I am appealed to every month in the year to give publicity to many things that I do not choose to burn my fingers about; but if I did not notice this vice in naming plants and seedlings, I durst not show my face again at an Exhibition, but I confess it is very unpleasant to be obliged to find fault at all. The only thing I can do is to show neither fear nor favour, and to be candid in my strictures, as far as I know the matter.

I have just heard that the *Dipladenia splendens* has seeded in abundance, and the seedlings are up and doing well. Here, again, we shall soon have occasion for new trivial names, as no doubt some of the seedlings will sport, or, if they should not at first, there can be little doubt of some of them turning out good breeders; then the pollen of *crassinoda* and *atropurpurea* will give a new race of stove climbers as gay and as varied as Tulips. The *Echites* being as much in relation with *Dipladenia* as the *Azalea* is with *Rhododendron*, or nearly so; the pollen from some of the best of the species ought also to be tried on *Dipladenia*, and all the *Dipladenias* ought now to be crossed with each other for a chance, without waiting for the new seedlings. The beautiful *Mandevilla suaveolens* is only one remove from *Echites* and *Dipladenia*, and there is not a man alive who can say positively that the three will not interbreed. If so, what a field for new greenhouse climbers is thus opened for experiments. As soon as the new seedlings of *Dipladenia* come to be marked, I would advise cross-breeders to get one, as most of them know that a seedling got under cultivation is worth ten from a wildling for experimenting with.

DIELYTRA.—Her Majesty "Queen Mab," and a gentleman from the West of England, sent me the old *Dielytras*, or *Fumarias eximia* and *formosa*, but I have failed to cross either of them with *spectabilis*, or to get seeds from any of the three; but having heard that *spectabilis* ripened seeds without crossing, my failure need not be taken as decisive against the cross. There seem to be certain conditions of treatment, soil, and temperature necessary for seeding many kinds of plants. One cultivator only has yet succeeded in seeding the *Dipladenia* as above stated. One amateur has seeded the *Sidonia* Geranium, after a score had failed to do so for years, and a friend of mine, Mr. Turner, Curator of the Bury St. Edmond's Botanic Gardens, wrote in *London's Gardener's Magazine*, some years ago, about one who seeded the *Jacobaea Lily* (*Sprekelia formosissima*) after all the cross-breeders in Europe had failed in getting a single seed from it, or any produce by its pollen. What has become of the seedlings mentioned by Mr. Turner? for I only write from memory.

One of our correspondents mentioned lately that forced Geraniums seeded with him better than unforced ones, and this is just the very opposite to my experience, so that we are compelled to the conclusion, that certain conditions of climate, and management of the plants under experiments in crossing, influence the said plants beyond our control. We must also allow our total ignorance of what these conditions really are. I have tried many experiments with bulbs against Dr. Herbert, and by his request, which failed to establish deductions drawn from his own trials; and I have heard that his plant-houses were almost always kept much drier than we gardeners keep them, and I think that the degree of heat, and the quantity of moisture in the air at the time, have much influence on the seeding of certain plants; and I have seen little plants cramped in very small pots, and half-roasted in the front of old-fashioned greenhouses, seeding like grass, while plants of the same kinds hardly seeded at all under favourable circumstances; therefore, the field is still wide open for all comers, and no one need keep away from

cross-breeding with an idea that he is too late in the field.

I only know of one family, the Sword Lilies (*Gladioli*), which may be said to be monopolised by any one, but Mr. Cole, of Birmingham, just named in connection with Punch and Judy, has the *Gladiolus* certainly under his own thumb, and he will make a fortune out of them. He is now selling them by the hundreds, for he told me so himself the other day, when he called to tell me of his ups and downs since he left me in Suffolk.

VERBENAS.—No one, I believe, has yet tried to cross *Verbena venosa*, or the *Aubletia*, or any of the *Stachytarphetas*, with the dwarf bedders, but that all of them will breed together I have no doubt. I have myself crossed and had a cross seedling from *venosa*, with a greyish flower, and the entire habit of *venosa*, but I believe it is lost now; the process of crossing them is extremely troublesome and difficult of execution, and what I would recommend is this—to plant one or two plants of the upright kinds in a bed, or along with a patch of the trailing ones in a mixed border, and to let the bees, or the wind cross them, and take all chances. The habit and hardihood of *Verbena venosa* would give quite a new stimulus to this class, and long, scarlet, spike flowers would be a great novelty in beds. "Sports" ought now to be looked after as keenly as ever crossing was, and means taken to secure the sport at once, because, after a while, although the flower, or the leaf that has sported, may hold on, the juice or blood inside is altering day by day, and, at last, may turn back the sport. I saw a sport this week of the *Mrs. Elliot* Rose, with the flowers as much streaked and stained with dark crimson blotches as the new Rose I mentioned the other day as being named after the late Queen of the Belgians (page 218), and recommended buds to be instantly taken from it, and put on *Munetti*, or other stocks, with a view to perpetuate the sport if possible. The moment a variegated leaf appears on a shoot as a sport, that shoot ought to be cut off then and there, and all the green leaves on it be discarded, and the part be made into a cutting or a graft, or even a bud, if the thing has a visible bud—the buds of Geraniums are not visible. Two days after the appearance of a sport may suffice to charge it with the more natural juices of the parent to such a degree as will cause it to return to the mother form on the next growth. I can hardly explain myself to-day for want of room, but the weather for the last nine months has been so much out of level that I expect more "sports" among flowers and vegetables this summer than have been noticed these last ten years. Very many plants never stopped growing all last winter, till the weather broke out cold and dreary last March—then such a severe check was given to an unnatural accumulation of unripened sap, that the whole gathering of sap since last October, is now (27th June), and for some weeks' past, on the ferment, with a soft, sultry, summer sky, and, probably, will cause all the freaks and fancies of which nature, among flowers, is capable of ever producing again in our days—therefore, let me earnestly entreat of all who wish well to our gardens and orchards, to be on the look out for sports in time, and to lose no time in securing one when they see it; and next time he or they write to THE COTTAGE GARDENER, send "a full and particular account" of the thing, that we may all know it; and some of the most difficult crosses may be got easily under a deranged condition of the sap. Just try.

D. BEATON.

PLANTS FOR BASKETS IN A COOL GREENHOUSE.

"WILL you furnish me with the names of a few plants, suitable for growing in fancy wire baskets suspended

from the roof of a cool greenhouse?" This inquiry deserves prominence on two accounts. First, because the letter is so short, and to the purpose; and, secondly, because the matter has not previously received very direct attention, though it has frequently been swept over by a side wind.

A lady, of acknowledged refined taste, lately expressed her surprise that I had not scores of such baskets suspended from the conservatory and veranda roofs. I am well aware of the striking effect they would produce, not merely from the novelty of the arrangement, nor because they would awaken ideas of Chinaman's land and oriental magnificence, but because we have many plants that never look themselves unless when allowed to suspend their branches freely. Witness the *Nemophila insignis*, whose praises I have lately recorded; witness the whole beautiful group of *Anagallis* and creeping *Lobelias*, which never look so much at home as when waving from a basket or vase. Witness, again, the whole evergreen trailing group of *Helianthemums*, with their single and double, yellow, creamy, copper, pink, straw, sulphur, and white coloured flowers in spring and summer. They are, no doubt, beautiful in beds on the level ground, but what is their interest there compared with seeing them trailing over banks, or rude knolls, or baskets of stones?

However made, whether of iron or rustic wood work, suspended baskets will present a new charm to the greenhouse. Why do not gardeners use them more often? Because attention to them involves additional labour, and that is a commodity, they, as a class, find keeps no proportion with the increase of work from improvements. For their introduction we must, therefore, in the first place, depend upon our amateur friends. It will not be the first time that we are indebted to them for improvements. If at times we can supply practical details, it is only an attempt to pay back some of the brightest ideas on gardening we owe to them.

Before enumerating a few plants I have either used, or seen adopted for such suspension in baskets in such a cool house, let me say a few words as to the preparing of such baskets.

Where mere neatness and economy are concerned, nothing is better than wire, as it can be easily worked into any shape. A great variety may also be produced from wood, crooked and gnarled, covered with bark, or oiled and varnished, and a pleasing effect is often produced by pieces of split cane, and pieces of, and specimens of the cones of the fir tribe. Supposing that wire is approved of, the first thing to do is to protest against painting; however well done, it will soon disappear when in constant use. Neither let the baskets be made of galvanised wire, for every cut made during the forming of the basket will expose the wire there to the oxydising rusting effects of the atmosphere, and before long this will creep along, and give you as rusty a vessel as if you had used common wire, and exposed it to damp. The best plan is to make the baskets of suitable wire, and then send them to a galvanising company to be dipped. Most wire-workers are in the habit of sending whole webs of wire rabbit-fencing to be thus dipped. Every end, cut, and tie of the basket are thus encrusted, and will bid defiance to rust for a long time. In elegant houses, I yet expect to see fine artistic China baskets manufactured for this purpose.

Whatever be the material of the basket, its preservation, and the welfare of the plants, will be promoted by having a vessel to fit inside, in which the roots and earth of the plant shall be placed. Of course, in a close wooden basket, with holes for drainage, this may be dispensed with, but at the risk of premature decay. In an open wire vessel it may also be dispensed with, but independent of the wear of the wire, there is the additional labour of packing all the interstices of the wire firmly

with moss. That would require to be done, even if the roots were growing wholly in decayed moss, instead of earth. I have frequently adopted this mode from choice, when I wished to make something like a globe of bloom as soon as possible. The roots were placed in layers inside, and the tops of the plants just brought through the moss, and the chief care they required was dipping the basket in water as often as the state of the roots required it.

I have grown Musk mimulus, Forget-me-not, Lobelias, Verbenas, and various kinds of Achimenes, in this manner. In spring, Tulips, and Crocuses, and Snowdrops, might be done in a similar way. In general, however, in the case of all plants that trail freely, little is gained by the mode, as they will soon cover the basket, and give but little index whether the shoots proceed from the sides or the top. I, therefore, all things considered, recommend the plants to be grown in an interior vessel; and the best, for general purposes, we consider to be those made of zinc, because, first, such a vessel will take up but little room, and, secondly, because almost all plants that we have tried answer well in such material. Our readers will recollect our allusion to such vessels at Trentham; and though our experiments have been chiefly confined to propagating, so far as we have tried, our practice confirms Mr. Fleming's surmises and conclusions. Whether this metal shall be greatly used for ornamental plant-growing will depend greatly upon amateurs with refined taste: sobersided practicals will have to stick to the red pottery. But, for their weight, and the room they occupy, a common garden-pot, with suitable plants grown in it, may be stuck inside a wire basket; the space between the sides of the pot and the side of the basket stuffed with moss, which will conceal the pot, keep the roots in such a suspended position in an equal temperature, or tend to do it, and so far as possible minimise waterings.

Let us now glance at a few of the plants suitable for such a purpose in a cool greenhouse—

1st. **HARDY PLANTS.**—I mention a few of these merely on the principle that, in such a house, a common thing, in a healthy state, especially in winter and early spring, is more interesting than a woe-begone exotic, however rare.

Lotus corniculatus flore pleno.—Every one knows the yellow *Corniculatus* of our pastures. The double one is just more interesting when grown in rich loam, in a pot, well-watered, all the blooms pruned-off in the early part of summer, and encouraged to grow, it makes a rather pretty mass of yellow, in a little basket, early in the spring.

Helianthemums.—The whole of the trailing, low-growing, evergreen kinds, will bloom soon after Christmas, if treated in the same way. They should have a good portion of broken sandstone, charcoal, and rotten wood, and leaf mould incorporated with the soil. Now is a good time for inserting cuttings of firm side-shoots for a stock, under hand-lights, in sandy soil, in a shady place.

Vinca.—The whole of the Periwinkles delight in the shade, and make long, straggling shoots—hence the name, from *vinculum*, a band. Most of them bloom in mild winters out-of-doors. I have found this is greatly promoted by cutting the shoots back to a prominent bud in April, May, and June. I once had a plant of *Vinca major* in a large pot, with abundance of its large blue-purple flowers, and its glossy, green foliage at Christmas. Such a mass would have adorned any basket. Besides this *major*, there are several varieties of *minor*, with small flowers, purple, blue, and white, and with small foliage—green, white variegated, and yellow variegated. A fine basket of the latter would give a cool greenhouse a lively appearance in the winter months.

2nd. LOW-GROWING PLANTS—HARDY AND TENDER.—Of these, we first mention the *Nemophila insignis*, *atomaria*, and *maculata*. Sown in August, they will bloom from March to June, and if no seed is allowed to grow, and the plants are somewhat shaded, they will continue on during the summer. Labour, however, will be saved by sowing in spring. The chief care required in its cultivation, is never to wet the plants at their collar, or damp and gangrene will ensue. In watering, therefore, it is best to dip, but not let the water rise to the surface. *Atomaria* should be so placed, as to be near the eye, so that the black dots on the white petals may be noticed. A little moss had better be placed between the stems of *maculata*, and the rim or wood-rim.

Lobelia.—The whole of the small-growing group are well fitted for this purpose. The best are those with a lighter or darker blue tinge. Of these, as peculiarly fit, I single out *gracilis*, *speciosa*, *bellidifolia*, and *erinus maxima*. The last is the weakest-growing and possessing a little more of an upright tendency than the others. Sown in a slight hotbed in March, or preserved as cuttings or young plants over the winter, they will bloom in baskets the whole of the summer, and, if freed from seeds, the most of the winter. They will require rich, light soil.

Anagallis.—Of these, the large blue, and the large red, are the best, and to secure them, they should be propagated by cuttings in spring or early summer. The same plants will last a considerable time in baskets when they are well pruned back in autumn. Light, rich soil suits them. They answer in beds but in few places; they grow too strong. In baskets they are just in their element. The confinement given to the roots causes a profusion of bloom, and who can look upon shoots some eighteen inches in length, studded with bloom, in a sunny day, without admiration. Another advantage, or, perhaps, a disadvantage, about them is, that they become a sort of sun-dial, or weather-glass, as they are very shy in unfolding their beauties in dull weather. In a confined atmosphere the green fly dearly loves to feast on them, and tobacco must expel those marauders.

Verbena.—Most of those with the old *Malindres* habit are suitable for this purpose. I may instance old *splendens*, *Tweediana grandiflora*, and the less rampant grower, *Barkerii*. One of the very best for this purpose is one of the first introduced, with purple-lilae flowers, produced in great profusion, namely, *pulehella*; and another good one, next to lost, but now getting into notice again, is *sulphurea*, which makes but a poor appearance in a bed, though it is elegant suspended.

Saxifraga sarmentosa.—This is the only way to show off this pretty plant to advantage. If any of our friends do not know it, or if we mistake its name, they will form a pretty good idea of the one we mean, by suspending a patriarch of a Strawberry plant in a basket, with ever so many generations of runners, the one proceeding from, and dangling from the other, and many of these, as well as the parent stool, decked with little whitish flowers. The leaves themselves are singular and pretty. To this may be added *S. cuscuteformis*, another trailing plant of the same family. A little peat earth and rotten wood in the soil will be gratefully received.

3rd. STRONG-GROWING HERBACEOUS PLANTS.—I instance these for tall houses, or for situations where it is desirable to have the shoots to dangle several yards, instead of a couple of feet. I will merely mention them—*Tropaeolum pentaphyllum*, *T. pelegrium*; the first propagated by tubers and cuttings, the second from seed; and varieties of *T. Lobbianum*, for a warm place in autumn and winter. *Rhodochiton volabile*, by seed and cuttings. *Lophospermum Hendersonii*, *crispum*, and

spectabile, variegated, best propagated from cuttings. *Maurandya Barclayana*, *Hendersonii*, and *alba*, are all peculiarly suitable. I shall never forget the first time I saw *Barclayana* so used. It was in a large basket, some fifteen inches diameter, suspended at a height of twelve feet, and the shoots clothed with purple flowers were then dangling seven feet in length. This family, *Lophospermum*, &c., like all the rest, will bloom more profusely and longer by cuttings off all the seed-vessels as they form. The same plants, with fresh soil, will last for years, by pruning back in the end of autumn, as the pendent position of the bulk of the shoots will cause young ones to be produced near the roots.

4th. PLANTS OF A SHRUBBY CHARACTER.—As a connecting link between the last and these I may first mention

Hibbertia grossulariaefolia, a beautiful trailer, with small foliage, and pretty yellow flowers. It is easily propagated by divisions or cuttings.

Hibbertia volabilis has also large yellow flowers, much larger than the last, but it has rather too much of the twiner to hang its shoots gracefully, and though the flowers are beautiful, they are the very opposite of fragrant.

Mahernia incisa, *grandiflora*, and *pulehella*, are small plants that may be used with advantage for this purpose, as the small flowers have a pendulous character, and are best seen from below. As the shoots will rarely grow above two or three feet, they should not be placed at any great height. The small flowers are yellowish-white, and red; it is propagated by cuttings, grown in sandy peat and loam.

Sollya angustifolia, *linearis*, and *heterophylla*.—Shrubs of a climbing habit, with small, beautiful, blue flowers, that will do for baskets when the shoots are first tied to the rim, and then to the sides, to counteract the upright tendency. Easily raised from cuttings, and thriving in peat and loam.

Convolvulus canariensis.—Bluish-pink in colour, and strong-growing, producing shoots of a pendant character, from three to eight feet in length, and blooming freely. The plant should be cut back in the autumn, or early in spring, and then, with fresh soil, it will continue for several years. It is very subject to the red spider. I have tried the annual garden *Convolvulus* for similar purposes, but their natural habit of bind-weeds combines them so closely that they do not festoon freely.

Kennedyia coccinea, *rubicunda*, and especially *prostrata*, may be used for this purpose, when not grown on rafters or trellises. They must be grown chiefly in sandy peat. Their general treatment has been already given. In baskets, watering must be carefully attended to.

Dolichos lignosus, *Passiflora cœrulea*, *P. cœrulea racemosa*, and *P. Colvillii*, may be so used when the house is lofty; and these kinds of plants are not grown from the rafters. They would require to be cultivated in rich soil; to be watered at times with manure-water; and to be pruned back freely when done blooming at the approach of winter. Keep in mind that it is the young shoots of the present season that bloom, proceeding from well-hardened buds of the previous year. I was going to mention *Passiflora Billottii*, but I find it rather tender for a cool greenhouse.

Jasminum gracile.—This is a beautiful thing, with small, dull-white, sweet flowers, and will require similar treatment as *Sollya*, as respects tying to the basket. When done flowering, prune most of the flowering parts away, and encourage young shoots; and, in proportion as they are ripened, will they show bloom at every bud next season.

SUCCULENTS.—Need I instance *Mesembryanthemum*? I am not botanist enough to be able to distinguish

much more than a tithe of them. But the whole of these, with a prostrate, trailing habit, that we have received from the Cape of Good Hope and New Holland, would do admirably for this purpose, and, with little trouble, yield their blooms from April to the end of October. I may instance such kinds as *sarmentosum*, *aciniaciforme*, *equilaterale*, *attenuatum*, *caulescens*, *floribundum*, *lævigatum*, *virgatum*, *torquatum*, &c. These should be grown in sandy loam, lime rubbish, and cow-dung. Small baskets would suit. Little water would be required in winter, as they would mostly absorb sufficient from the atmosphere. When the days lengthen they will be grateful for a little manure-water at times, and will then grow freely.

Hoya carnosa.—This will do if kept in a rather dry and warm place in winter. I have seen a fair specimen kept for a number of years in a room, and it bloomed fairly every season.

Cereus flagelliforme and *C. Malesonii*.—Unless these are grafted so that the shoots will hang down, there is no other mode of showing the plants to such advantage as when suspended in baskets. The same treatment must be given them as was mentioned for Cactus lately. Nothing requires less trouble, when the treatment is understood, than succulents.

6. A FEW FOR SUMMER BLOOMING where there is the assistance of a hotbed to forward young plants from seed or cuttings in spring. I will merely mention two genera that would do well in such a position from the end of June to the end of September.

Torrenia asiatica.—No mode of training will show this beautiful plant to be so much at home.

Thubergia alata, in its varieties of buff, yellow, orange, and white, will likewise do well during that period, but care must be taken to place the baskets where you can exercise the syringe among the shoots, or the red spider will fill the house to a certainty. They are worthy of the trouble, as when well managed they would be really beautiful.

One word more. Do not place the plants in the baskets until they are a good size; this will save labour, and leave less for longing expectations.

But our correspondent may say, here I shall be non-plussed with abundance; what am I to do with these nine baskets? Well, for this period, and as easily to be got, the following might do:—

Lobelia speciosa; *Hibbertia grossulariaefolia*; *Anagallis Phillipsii*, large, blue, and red; *Saxifraga sarmentosa*; *Verbena pulchella*; *Verbena sulphurea*; *Maurandya Barclayana*; *Cereus flagelliformis*. R. FISH.

STOVE FERNS.

(Continued from page 181.)

SOIL.—To grow Ferns satisfactorily the right soil is an important point. Growing, as they generally do, in the thickets, or jungles, in hot climates, where the soil is principally formed of decayed leaves, small branches of trees, their roots small, twiggy, and fibrous, in a close, moist atmosphere, we have only to imitate such circumstances, and success will attend our efforts. In this country we must have houses artificially heated to the requisite degree, and the proper soil or compost procured. The materials for this compost, that I have used with perfect success, can be easily procured in most parts of Britain. They consist of vegetable mould, formed of decayed leaves, peat soil, or, as it is generally termed, heath mould, silver sand, and sphagnum, or bog moss. I mix these in the following proportions—vegetable, or leaf mould, one or two years old, one-third; fibrous peat, one-third; bog moss, finely chopped, one-third; and as much silver sand as will give it a whitish-

silvery appearance. For very small plants I put this compost through a rather fine sieve; but for large plants I do not sift it at all, only pulling the peat in pieces, and taking out the very roughest pieces, stones, or other extraneous matters, mixing it thoroughly with the other materials, and using it in a state of moderate dryness and warmth. When mixed it has a considerable resemblance to the compost I use for most of the Orchis tribe.

In this rich, light, open compost, the roots of the Ferns run freely, and the plants riot in health and luxuriance, due care being given to supply them with the proper heat and moisture; of which, more anon.

POTTING.—Ferns are, in this point, something like Heath; they will not thrive luxuriantly if pot-bound, and, therefore, should be frequently repotted. Young plants from the seed-pan should be potted three times during the summer—the first time in March; the second in June; and the third in September. Larger plants will do well if potted in March and August.

In potting, the first thing to attend to is the drainage; for, though these plants love moisture, they will not thrive in stagnant water retained in the pots. The best material for drainage is broken potsherds, covered with a thin layer of moss. Place a large piece over the hole at the bottom of the pot, some smaller pieces over that, and a layer of some still smaller upon them; then a covering of moss, and upon it a small quantity of the rough fibres of the peat. Examine the balls attached to the roots; if they are very dry, soak them thoroughly in tepid water, and let them have time to drain off the superfluous moisture. If potted in a dry state, it is almost impossible ever to wet the old ball thoroughly, and the plant, consequently, languishes and turns sickly for a long time. If the ball is in a proper state of moisture it may be potted at once.

These plants will bear a large shift in such a light, open compost. Small plants may be allowed a full inch between the old ball and the sides of the new pot; and larger plants may have from one-and-a-half to two inches. Fill in the pot as much soil over the drainage as will raise the ball nearly level with the rim, then place the plant upon it, and fill the compost round it, pressing it down pretty firmly as the soil is put in. When quite full, give the pot a smart stroke or two upon the bench, to settle the soil equally in every part, and be careful to leave sufficient room between the top of the pot and the soil to hold water sufficient to wet the whole thoroughly every time water is applied. This space, as a matter of course, must be small for small plants, and so on in proportion to the size. Very large plants will require a full inch to hold water enough to wet such large balls.

The reader may here exclaim, "But how shall I know when the soil in the pots is thoroughly wetted?" In all the operations of gardening there is none that requires more judgment and experience than that of watering. Many a fine Fern, and Heath, too, have perished by improper treatment in watering, and that, in a great measure, has arisen from injudicious potting. If the space between the soil and the rim of the pot is too scanty, the water given will only wet two or three inches below the surface, the remainder will be as dry as the deserts of Arabia, and the roots miserably perish. The only sure way to find this out is to turn out the ball an hour or two after watering it, and it will soon be seen whether the water has penetrated to the bottom. The ball may also be so hard that the water runs down the sides of the pots without entering it. In such a case, I thrust a sharp pointed stick or iron rod into the ball, making numerous holes to allow the water to penetrate to the centre. In very severe cases, I have sometimes recovered a plant dying for want of water in the centre of the ball, by placing in water long enough to soak it thoroughly;

but such extreme cases will seldom, if ever, occur, if due attention is paid at the time of potting to leave space enough to hold water. The cultivator may, by experience, learn when the ball of earth in the pots is in a proper condition of moisture by sound, that is, by striking the outside of the pot with his knuckles: if the sound is dense or heavy, the soil is moist; but if sharp, it is dry. Again, we may judge the same point by lifting up the pot. If it is heavy, the soil is moist, and *vice versa*. Many of my customers ask, "How often should the plant I have bought be watered—every day?" No, is my reply; you must only water it when it is dry, on the same principle that you feed your horse only when he is hungry.

All this about watering! Is all this attention necessary? Certainly it is, and experience alone must guide you. It is not the pouring a quantity of water over your plants that will do them good; it is the right application of it, at the right time, in right quantities, that will cause your plants to thrive; and proper attention to soil and potting will give you power over this point of watering.

T. APPLEBY.

(To be continued.)

ROSE CLASSIFICATION.

A CORRESPONDENT wishes for information about the classes of Roses; the characteristics of each class; with a few examples. As the information will, no doubt, be useful to many of our readers, I shall take the opportunity of giving a description of each class, so that any one may know whether any particular Rose is a Gallic or French Rose, a Provence, an Ayrshire, or a Perpetual, together with a few names illustrative of each class.

SUMMER ROSES, FLOWERING IN MAY, JUNE, AND JULY.

CLASS 1.—*Rosa Gallica*, the French or Common Garden Rose.—This class may be distinguished by a stiff, upright growth; by blooming in summer only, all the bloom being over by the middle or end of July. They will grow in any soil, but their beauty is greatly increased by good cultivation. The flowers are remarkable for their brilliant colours, perfect outline, and regularly disposed petals; hence they are well adapted for exhibition as cut Roses. Examples are—

Celestine, pale rose; superb and full.

Grandissima, purplish-rose; very large and full.

L'Amethyste, dark crimson; large and full.

Eillet Parfait, pure white, with broad stripes of crimson; beautiful, and very double.

Village Maid, white, with broad stripes of purple; large, and very double.

William Tell, bright rose; edges blush; superb.

CLASS 2.—*Rosa centifolia*, Provence, or the 100-petaled Rose.—Distinguished from the preceding by their globular-formed flowers, their delicious fragrance, and more slender habit of growth. There is a small section of this class, named *Pompon Roses*, of a more dwarf, compact growth, and small double flowers, suitable for edgings of large rosaries, or small beds, or for forcing. Examples are:—

Cabbage, or *Common Provence*, a well-known favourite Rose.

Délices de Flandre, light pink; very large and double.

Unique, pure white; large and full.

Vilmorin, bright flesh-colour; very double.

POMPON, OR MINIATURE PROVENCE.

Dwarf Burgundy, deep rose; very small and double.

De Meaux, rosy-lilac.

Spong, pale rose; small, and very double.

CLASS 3.—*Rosa centifolia muscosa*, Moss Rose.—This is a very distinct class, well known by their calices

being much divided, so as to have a mossy appearance. This fringe is a great addition to their beauty, especially just when the bud begins to expand, showing the beautiful colour enclosed in a mossy green cup. There are

The old Common Moss, said to be originated accidentally from the Provence Rose. From it all the varieties retaining the mossy character have been raised.

Celina, rich crimson, shaded with purple; very large.

Lanei, rosy-crimson, tinted with purple.

White Bath, paper-white; large and full.

CLASS 4.—*Rosa Damascena*, or *Damask Rose*.—This class may be known by its rough, spiny shoots and leathery leaves; also the shoots and leaves are of a very light green, contrasting beautifully with the dark-leaved Bourbons and Perpetuals. The flowers of some varieties in this class are of a pink hue, suffused with salmon, rendering them exceedingly beautiful. It is the hardest of all Roses. Examples are:—

Bachelier, vivid salmon-pink; beautiful and full.

Leda, blush, edged with cherry; large and full.

Madam Hardy, pure white; beautiful, large, and full.

Madame Soïtman, creamy-white, shaded with buff; large and full.

CLASS 5.—*Alba Roses*, and their *Hybrids*.—A small class, but from its extreme delicacy of colouring very valuable. Its principal character consists in the shoots being almost spineless, and the leaves in many varieties being of a milky-green hue. The examples are:—

Blush Hip, delicate blush; beautiful in bud; full.

Duc de Luxembourg, soft; lilac blush, tinted with rose; very beautiful, large, and double.

Madame Legras, pure white, centre sometimes cream; a beautiful rose, large and full.

Sophie Mareilly, blush, centre rose; exquisite in the bud.

CLASS 6.—*Hybrid Provence*.—The Roses in this class partake largely of the *R. Gallica* class, though some are more decidedly of the Provence breed; partaking of the character of both, they are difficult to describe, the only distinction being that of moderate growth. They are excellent exhibition Roses, especially in pots. The examples are:—

Aspasie, beautiful flesh, changing to blush; fine form; full.

Blanchefleur, white, slightly tinged with flesh; beautiful profuse bloomer; large and full.

Garibaldi, bright crimson; large and double.

La Vestale, white; fine form; very double.

La Volupté, bright rose petals, beautifully arranged; large and full.

CLASS 7.—*Hybrids of Chinese, Bourbon, and Noisette*.—Here we have an assemblage of Roses of various characters. To know them, the habits of their parents should be studied; they are the produce of hybridization between the *Gallica* and *Centifolia* and the classes indicated above. The hybrids of China are the most numerous. The hybrids of the Noisette are remarkable for the large trusses of flowers they produce. The examples are:—

Hybrids, in which the *Chinese* character predominates.

Aurora, crimson, shaded with violet; beautiful, large, and double.

Beauty of Billiard, vivid scarlet; rather small, but very double.

Chénédole, light vivid crimson, exquisite in colour; very large and double.

Fulgens, deep rich crimson; superb; large, and full.

Velours Episcopal, violet-purple; large and full.

Hybrids in which the *Bourbon* character predominates—

Charles Duval, deep pink; beautiful, large, and full.

Comte Bonbert, rose, sometimes tinted with flesh; large and very double.

Coup d'Hébé, rich deep pink; large and very double; form exquisite.

Hybrid in which the *Noisette* character predominates. The example is:—

Madame Plantier, pure white; beautiful and full.

CLASS 8.—*Rosa spinosissima*, or *Scotch Roses*.—These Roses are, as their name imports, natives of Scotland, and are found in bushy brakes on hill sides. In their wild state they are single, but cultivation has greatly improved them. There are numbers of varieties with double flowers of every hue. For the front of shrubberies, or even in beds, in wild parts of the grounds, they are useful as ornaments. They are easily known by their small, weak branches, tiny leaves, and small flowers. There are some hybrids that are desirable even for the Rosarium; *Williams's Yellow* is an example.

CLASS 9.—*Rosa lutea*, *Austrian Roses*.—This class is a very distinct one, but difficult to describe. Examples will teach more by a single glance than pages of description. They are remarkable for brilliancy of colouring. The best Yellow Roses in cultivation are in this class, namely, *Harrisonii* and *Persian Yellow*. Out of bloom they look like small, weak growing, wild briars.

Rosa sulphurea, and the *Sweet Brier*, with its hybrids, are nearly allied to this class. The former is the *Old Double Yellow Rose*, so difficult to bloom, but when it does bloom it is very beautiful. The examples are:—

Austrian Copper Rose, *Yellow Rose*, both single, but very beautiful.

Sweet Briars.

Celestial, blush; semi-double.

Double Scarlet, rich deep rose; distinct and double.

Double Margined Hip, flesh, edged with crimson; very large and double. T. APPLEBY.

(To be continued.)

WALK EDGINGS.

WHATEVER may be the merits of the various articles used as edgings to walks, it seems agreed on, by usage, that one of Box stands pre-eminent; and whether we take it for its hardihood, durability, or general appearance, as a live edging it would seem the first in its class. Nevertheless, there are places where it is inexpedient to have Box; places where neither that nor anything else will grow; and places where it almost refuses to grow, from a dislike to the soil. Now, though we profess to advocate the use of Box in all cases where it will thrive, unless other circumstances render another edging necessary, we will, nevertheless, advert to other kinds for the special purposes for which they may be wanted.

From time immemorial, edgings for paths have been deemed requisite for appearance, and in some respects for stability. The various Roman causeways, which intersected the cultivated parts of this country during the time that wonderful people held possession of it, have all a row of larger stones at the edge than in the centre, showing that "an edging" was not unknown at that early period; and from them, down to the present period, some sort of margin seems be considered necessary to all sorts of pathways, be that a turnpike foot road, a street pavement, or the more humble crossing that carries the cottager from his back door to some out-house. To all an "edging" of some sort seems requisite, and all have their edging accordingly.

Let us, first, warn the inexperienced amateur against falling into error by planting a wrong kind of Box. Like many other plants, more noticed perhaps, the Box has divided itself into varieties, differing in their dwarf or robustness of habit, the extremes being denominated "tree," and "edging Box;" but, independent of these

extremes, there are (as in most other things) intermediate kinds, too coarse for edging purposes in many places, though not in all; and in those situations where the very dwarfest kind refuses to grow, this stronger growing one may be introduced to advantage. Whichever may be used, be sure that all the edging planted in one place be all of a kind; for though we advocated cutting and trimming, yet the jagged and very uneven growth that takes place when the dwarf and robust are intermixed, or, what is equally bad, half one, and half the other, in the same line, renders it necessary to be very exact in having it true. We will not here go into the details of planting, which are well known, but merely say, that we cut but little (seldom any) of the top at the time of planting. It is likewise necessary to be careful that the ground on which it is planted be all alike in quality, and not to have the roots of one piece luxuriating in the rich soil of the kitchen-garden squares, and another struggling for existence amongst the hungry gravel and other substances the walk may be made of. These matters are often neglected, and the edging presents afterwards a diversity of growth not to be wondered at, when we consider the circumstances in which it was placed. It is scarcely necessary here to point out the best season for this duty, for it rarely happens that any regard can be had to that; we have planted it at all seasons, but prefer the month of April. Whenever it is planted in dry weather, it should have the advantage of water for some time afterwards, and it will seldom fail to grow, even when its roots have been much curtailed. In moist, cool districts, large quantities are often put in without any root at all. The middle of the growing season is the worst for planting, but we have done that in a case of necessity, and been tolerably successful.

Notwithstanding the reputed hardihood of Box, we have seen it show more signs of suffering from spring frosts than many things supposed to be more tender. Some frosts we had in the early part of May, 1852, followed by a bright sun, "cut up" the tender growth of Box-edging on the east sides of those lines which run north and south, and were exposed to the morning sun. This, we suppose, to be owing to the cold air floating nearest the ground, and the sudden exposure to unclouded sunshine after. Nevertheless, we need not be afraid to plant it in exposed situations; for, though it suffered severely, and for some days was quite black, still it recovered itself without any portion falling a victim to the ordeal to which it had been subjected.

We have heard it said, "There cannot be any good gardening where Box-edging will not grow." From this we entirely dissent, as we have seen an excellent and well-kept garden, where, after repeated trials, in which the Box perished piecemeal, its use was given up, and a dead edging, we believe of timber, substituted in its place. This was in a garden, the gardener of which received medals at the London Horticultural Shows; and it proves that there are some soils which do not possess in sufficient quantities the necessary ingredients on which Box lives, or some which it dislikes; consequently, after dragging out a miserable existence, it dies, piece after piece, until the edging becomes no edging. It would be difficult to describe the precise kind of soil the Box dislikes, but we may say, that where Sorrel is found very abundantly it is often a proof that the Box will not be at home there; while we have seen it thrive on a sandy soil that would almost drift before the wind, and it thrives equally on a retentive loam.

Though it cannot well be planted at this season, yet it may be successfully trimmed into order, which is a point equally necessary to its general appearance. For this purpose, damp, dull weather is the most suitable time. Its mutilated leaves are not then subjected to

the scorching influence of the sun until a partial recovery takes place; and the same may be said of those interior leaves which, having been long concealed, are not able to bear exposure to hot sunshine with impunity. By cutting Box at this season a part of its summer's growth, also, will be retained, which will look well the remainder of the year.

As we have before said, every walk ought to have some visible edging, or margin, whereby its outline is distinguished from the ground which adjoins it. Even the back paths, or thoroughfares, ought to have boundary marks to denote how far they ought legitimately to extend; these, however, had better be either brick, or stone of some sort, sunk in the ground. Common bricks make a very good edging, laid either edge or endways up, where traffic is supposed to pass over them; but they look best when laid angle-ways up, like the ridge of a house, and, if done carefully, they look remarkably neat. Rough stones, or flints, will do in certain situations, where there is not much traffic to displace them; but in a wilderness, or other romantic situation, they are the most proper; while in the precincts of the mansion, or dressed grounds, a prepared kerb-stone, or something that represents it in the Terra-cotta or plaster way, will, doubtless, be preferred, the increasing uses to which the last of these has adapted itself will most likely lead to many pleasing forms of edging, and other ornamental work, so that we have no doubt but the others will be eventually driven out of the market. Slate may be used in some places, and so, likewise, may cast-iron; but the first is too thin to look well, and the last liable to many objections—not the least being its expence, where, perhaps, a mile of it be wanted.

We are aware that in a kitchen-garden many live edgings are turned to profit, or intended to be so, but their disorderly appearance more than counterbalances any good likely to be derived from them. We have seen Thyme, Hyssop, Pennyroyal, Strawberries, Parsley, and many other things, all employed for that purpose; but, excepting the last, it is seldom that any good is derived from them.

J. ROBSON.

CULTIVATION OF TURNIPS.

(Continued from page 128.)

IN a former article, having written upon the subject of cultivation of the Swedish Turnip, I now propose to treat of that of the Common Turnip, having found, from experience, that this requires a somewhat different and more particular mode of preparation of the soil.

Since the application of artificial manures, and the use of the drill have become more general in the cultivation of Turnips, they have been more successfully grown as a second crop after Tares, Trifolium, &c., than formerly. I, therefore, propose to divide the subject into two parts, first, the cultivation of Turnips by a fallow preparation; and secondly, their cultivation as a second crop.

In fallowing land for this crop, it is not requisite in most soils to commence ploughing the land in the autumn, as in the preparation for Swedes, for as the varieties of Common Turnip do not require to be sown very early, there is, in consequence, plenty of time to make a clean fallow, in ordinary seasons, before the time of sowing. The first, or fallow ploughing, should take place about the month of November, or the early part of December; if the land is clean it should be

ploughed a good depth, say six or seven inches; but if foul, with couch grass, then comparatively shallow, that is about four or five inches. After being properly water-furrowed, the land may remain undisturbed during the winter months, until the return of dry weather.

As soon as the ground shows dry on the surface give the second ploughing, the same depth as the first, by turning the furrow back, after which, it is a common practice to drag and harrow the land, and attempt to clean it; but I prefer cross-ploughing before making any attempt to remove couch grass, and weeds, because the land will work down much more level, and will lay in a much better state for the action of the drags, harrows, &c. Working the land should now be proceeded with during favourable weather, taking care to remove or burn the grass and weeds, and obtain as fine a surface as possible, in order that the seeds of small weeds may vegetate, and be destroyed by the next ploughing. The number of ploughings, after having been once ploughed across, must be regulated by circumstances; if the land is infested with grass, as many ploughings, followed by harrowings and rollings, must be given as will be required to complete a clean fallow. In case the land is clean no more ploughing and harrowing, &c., will be necessary than will suffice to produce a perfectly pulverised state of the land to the full depth which it has been ploughed.

The second division of our subject relates to preparing the soil after a green crop. Under the present improved state of agriculture, few Common Turnips are now grown where the land is capable of being prepared sufficiently early to produce a crop of Swedish Turnips.

The system adopted upon the best managed light land farms, where a large stock of sheep are kept, is to sow Tares, Rye, or Trifolium, upon a large portion of the land intended for Turnips the following season.

The best plan is to sow the cleanest land with Rye, or Trifolium, and feed off by sheep in time for sowing Swedish Turnips, after one ploughing; the remaining portion, and the lightest soil, should be seeded with Tares, and may be fed off later, and tilled for common Turnips.

As it is not advisable to sow Swedes after the first week in July, the sowing of Common Turnips for the main crop should take place as soon after that time as the land can be brought into a good state.

After a green crop has been fed off, or removed, commence the tillage immediately by scarifying, or otherwise by ploughing rather shallow, and harrow, roll, &c., until the soil is perfectly fine, and remove or burn all grass, weeds, or haulm: three ploughings, with sundry harrowings, &c., will be generally required to bring the land into a fit state to receive the seed.

After the tillage named has been done, the land will, in some seasons, prove very dry; we have, however, the water drill, which may be used with great advantage in this case; and it must also be borne in mind, that the effect of the application of artificial manure has been to postpone the time of sowing at least a month, which brings us nearer the time of the periodical or autumn rains peculiar to our climate, thereby reducing the

damaging effect of dry weather, to which this crop is always liable when sown at an early period. The time of sowing must depend, in a great measure, upon the period the crop may be required for use. When required for early feeding by sheep, or stalled beasts, the land being intended for a crop of wheat afterwards, the Turnips may be sown any time after the 20th of May, without being liable to run to seed stalk; and the reason why this crop is preferred to that of the Swedish Turnip for early feeding, is because, upon most light land, the succeeding corn crop proves much better; for although a greater weight of the Swedish Turnips may be fed upon the land, yet the land will be kinder, and in a better state for Wheat, or Barley, after the feeding off a crop of Common Turnips.

When this crop is required for general purposes, such as feeding sheep on the land during the winter months, the best time for sowing is from the 14th to the 24th of July. If the main crop for winter feeding is sown much before this period, the roots lose a great portion of their nutrition, and become unpalatable to the stock; and in the same proportion that the roots lose their nutrition, so are they liable to decay.

Turnips sown after the middle of the month of July are not so liable to be taken away by the fly, because, in ordinary seasons, this insect is hatched, and disappears previously to that time.

The quantity of seed sufficient for an acre of land is about two pounds, the seed being somewhat smaller than that of the Swedish Turnip. When sown at the last-named period, Turnips are best drilled at eighteen inches apart between the rows, and left at about twelve inches apart in the rows; in this way roots of a moderate size will be produced, which are always the most nutritious, and least likely to decay.

JOSEPH BLUNDELL.

(To be continued.)

ON THE MANAGEMENT OF SILKWORMS

WITH COMMENTS AND ADDITIONS.

By the Prior Jacopo Ricci.

(Continued from page 231.)

HEALTHY and vigorous worms will form their cocoons in about three days; but the time will be longer or shorter as the temperature is higher or lower, and according to whether they are exposed to alternations of heat and cold, and to sudden draughts of wind, and whether the atmosphere be dry or damp. The cocoons made by worms treated upon our plan may be removed the sixth or seventh day, including the one on which the worm ascended. It may be delayed till the eighth, but not beyond the ninth, as the cocoons are every day losing weight. It must be confessed that it is difficult for the husbandman all at once to relinquish old plans and adopt others, though easy in themselves, and this may occasion some difference in the cocoons. The maturity of a cocoon is recognised by a certain hardness to the touch, and the sound the cocoon makes when shaken.

The gathering of the cocoons, like all other rustic harvests, is attended with so much hilarity, that confusion sometimes occurs, which renders a few precautions needful. Those worms should first be taken which first ascended the bush. Each *broom*, as it is called, should be removed carefully, not thrown from top to bottom in confusion, to the danger of crushing and soiling the cocoons. It will be well

to begin with the lower hurdles, and go up regularly. Those cocoons not quite finished, as well as those containing dead worms, must be laid aside. A very few of these, mixed with the others, will suffice to depreciate the price of all, especially if there be any putrid worms among them, which soil many good cocoons if packed together. Also the coarse silk, called Buva or Fluff, should be carefully removed, as well as all impurities which, from want of care, or other causes, may attach to them. In some countries, the Fluff is not removed till they are taken to market; but experienced merchants prefer to see it taken off.

The boxes, or other receptacles being full, are placed on the hurdles in layers not more than three inches thick, that the air may circulate among them. Without being deceived by false ideas that the cocoons formed at a certain time first diminish and then increase again in weight, it is a good rule to take them to market as soon as they are ripe. Experiments have proved that the cocoons lose $7\frac{1}{2}$ per cent. of weight in ten days, merely by the drying of the chrysalis.

Even now the cocoons may be injured by want of care in the ignorant agriculturist. Care must be taken that the temperature does not exceed 18° R. (73° F.); if so, the windows in which the sun shines must be closed, and the cocoons turned, especially if they are spread on the floor, or if fermentation be feared among them.

The proper preparation of the seed, or eggs, is most important; and the best chance of our making progress in an art hitherto neglected by masters and servants from the very beginning, is the care and attention bestowed upon procuring good seed. It is an universal law that, in the production of all creatures, the better the seed, the more perfect the fruit; but this seems to be lost sight of, as we remarked at the beginning of this treatise.

The cocoons being gathered, after worms have been well reared no scrupulous care is necessary in the selection; but if not, or if any accident should have happened, the best must be chosen. It may be even necessary occasionally to buy cocoons from other worm establishments. It is thought that the most healthy and robust worms are those, who, having eaten for eight days after the fourth change, are first to make their cocoon, and amongst these, those who mount highest are strongest. It will be well to separate the cocoons which are first ready for the purposes of propagation.

The cocoons should be examined, and those of a middling size taken, as the large produce coarse silk, and the small ones no great quantity. They must be firm to the touch, especially at the two ends. They should be of even texture, such as are called royal cocoons; some prefer those of a pale straw colour, and which have a little ring indented round the middle.

There was a fancy, some years ago, for worms which spun white, or, as it was called, Persian silk; but though the merchant will give a higher price for it, it is not much cultivated, as it is less abundant, and more liable to injury. Although generally the red, green, and yellow cocoons are not chosen, they have been known to produce good silk, a proof of the necessity of frequent experiments before any particular practice is approved or condemned, as is often the case in treating of different systems.

There are no certain indications by which to distinguish a male from a female cocoon, but those supposed to be the least fallacious are the following:—They say that the cocoons containing a male are pointed at one or both ends, and are smaller in the middle, while the rounder ones generally contain females. Experience has shown, however, that though the greater part of the cocoons thus selected prove right, still, in so many instances they are wrong, that no dependence can be placed on this test. Some people place the male and female worms in separate bushes, fancying that the male has his eyes open, while the female has merely a semicircular stripe for an eye.

As to the number of cocoons, it is usually reckoned that a pound-and-half yield one ounce of seed. A good choice must be made of the room where the moths are to issue forth and deposit their eggs. The temperature must not be lower than 15° R. (66° F.), and it must be warmed occasionally if necessary. At 15° the moths will come forth in fifteen days, at 16° 17° or 18° R. (68° 71° 73° F.), in eleven or twelve days. It will contribute to the health and strength of the moths, and to the perfection of the seed, that the

room be dry, and in the adjoining apartments the temperature should be 16° or 18° .

Having taken the Fluff from the cocoons, they must be laid upon hurdles, and examined one by one, that all containing dead chrysalises may be thrown away, and this may be ascertained by shaking the cocoon close to the ear. It will be well, too, to separate those supposed to be the males from the females.

Whilst the heat is hastening the development of the moth, the cloths or papers on which they are to lay their eggs must be arranged. There should be a table in the room on which the moths should be carefully placed, separating the male from the female. The birth usually takes place in the morning, about sunrise, except a few that issue forth towards evening. They must be lifted carefully by the wings, placed in a little tray, and carried to the table. There they eject a bloody fluid from the lower stomach, which must be evacuated before the male and female are placed together. There must now be little light in the apartment, that the males may not flutter their wings.

When the number of males and females are not equal, the weaker ones may be removed; but if there be a superabundance of females, they may be reserved for a time, as one male will suffice for two females. When the moths have coupled, each pair must be taken gently by the wings and placed on a paper or cloth, slightly inclined, and in a cool, dark room, where air and light may not disturb them. The cloths or papers must be regularly numbered, that the insects may be separated at the proper time. They should be carefully watched, using a candle in preference to admitting daylight, and any pair that have separated should be placed in another paper, and left in the dark, when they will re-unite. The union should be permitted for thirty-six hours at the longest, and then, placing the cloths on the table, and holding the female with one hand, the male must be removed with the other. Then place the females on cloths fastened to the wall, and so arranged at the bottom as to receive those which fall; here the eggs are to be deposited, and the males which are not wanted again should be thrown away. Some people shape the cloths so as to form a receptacle at the bottom.

Some think the moths should not be left on the cloths more than six-and-thirty hours, fancying the eggs laid after that time are of an inferior quality; but those who have most experience say that such precaution is useless, and leave the moths till they have finished laying.

The eggs may prove more or less fruitful, but it most likely depends on the temperature of the room. Eight or ten days after the eggs are laid they change from a dark to a lighter, and in the course of three weeks assume the ashy hue. Whether the eggs are good or not, they are all roundish at first, and after a little become rather hollow at the sides, which indicate that they are drying; but there is no sensible difference even in weight between good and well kept ones and others. It will not hurt them to allow the cloths to remain spread out where they are for some days, if the room be not warmer than 15° or 16° , otherwise they must be taken to a cooler place.

If any should have fallen, they may be put into bags or papers by themselves. When the eggs have become of an ashy colour, the cloths may be loosely rolled up, and put into any dry place where the frost will not touch them; and to protect them from mice and other vermin they should be hung from the ceiling. Those who, without examination, hang them from the roof of their cellars, are not wise, as damp is very prejudicial to the eggs. In tracing the diseases of whole establishments of worms, it has been found that the eggs have been kept in a damp place, the ignorant agriculturist never thinking of the loss he may thus incur. The hygrometer or salt should be used to test the moisture of the apartment. If, in consequence of the heat of the season, a few worms should hatch in the course of some days, it does not matter; there is, most likely, something peculiar in the form of the embryo which hastens the birth of the worm. As the eggs are sometimes infested by a kind of moth which destroys them by sucking them, it is necessary to examine the cloths at least once a-month, to clear them, if possible, of these mischievous animals. This monthly inspection will be useful in remedying any other accident which may happen to them.

(To be continued.)

ORCHARDS.—No. 1.

HAVING occasion lately to visit a district celebrated for the extent and quality of its fruit plantations, I need hardly explain the beautiful appearance the landscape had with the large breadths of fruit-tree blossom displaying their charms too often to the inclement atmosphere that recalls the general character of March to our memory, instead of the middle of May; however, much as I grieved, in common with others more interested in the welfare of such products, I could not but admire the general state of cultivation by which each individual fruit was brought into a profitable condition, while, in many instances, individual species were treated with a regard which showed that more than a "cur-sory look-on" actuated the doings of those more especially interested in their culture. Now, when we reflect that there are some districts or parishes wherein the proportion planted with fruit-trees amounts to something like one-tenth of the whole, we may readily suppose that their various habits and "points" would attract the attention of those whose welfare is so intimately mixed-up with their well-being, that I was not disappointed to find the peculiarities of individual fruits had attracted that notice, even from the ordinary day-labourers, which a more learned critic would have been at a loss to find out; not but that some of the ideas of the former had now and then a little snatch of prejudice in it, or, probably, an occasional antiquated notion derived from a "bygone time;" still, there was much to learn from, and much that might be copied with effect in other places.

Before proceeding farther, I may inform the reader that the district I allude to is one of those undulated spots situated in the county of Kent. The elevations were seldom so precipitous as to prevent the use of the plough (had that been wanted), yet, on the whole, it might, in common phrase, be called a hilly country. The soil (for the orchards which I allude to were all tilled) would not tempt a Mid-land Counties' farmer by its appearance; in fact, much of it would excite an impression that it could not be otherwise than "barren,"—a sort of yellow, friable loam, mixed with more or less of stone of the same dirty colour, and often resting on a subsoil that would seem not likely to add to its fertility; that the first general impression a stranger has of it is certainly not favourable, and until he be otherwise informed, he is apt to infer that the healthy trees and hedges he sees around him are due to some artificial manure liberally applied, or that the climate is peculiarly congenial to such productions. Without doubting for a moment but that the latter has much to do with the success obtained, I think it right to say, that but little arises from artificial applications, not but that the best cultivators manure to the full extent of their means, yet that alone would not produce those splendid crops which are the admiration of those who have not seen similar crops before, did not the soil "naturally" possess the qualification for producing and maintaining the same. Now, though it would be difficult for me to convey to the general reader an idea of what this soil is, I may tell him that much of it is found forming the crust over an extensive bed of limestone. Certain fruits like to grow over "chalk," but these I now mention have either a limestone substratum, or otherwise a soft, porous stone, called, in common phrase, "hassock," near the surface, while, lower down, limestone is usually to be had in more or less abundance; at all events, the most of the orchard-grounds are dry, so that "draining" a fruit-plantation is of rare occurrence, and unless in the case of *Black Currants*, and, it may be occasionally, *Cherries*, both of which like a moister soil than most other fruits, it is seldom we see an extensive plantation of fruits on land that has ever wanted artificial draining; therefore it will be fully understood that the orchards of which we speak are usually dry.

An ordinary observer would, in many cases, be equally surprised to see the crowded condition of some of our orchards when different fruits are gathered together, which is very often the case. Six feet standard Apples are planted over the ground with mathematical precision, as to distances, &c., which is from twelve to thirty feet, according to circumstances. Midway between these Filberts are often planted; these are trained with a severity of which I will speak hereafter; and the intervening spaces are filled-up with Gooseberry or Currant-bushes, so that the whole plot

is expected to support a plant of one kind or other on every square of five or six feet.

At first planting, and while the trees are little, this does not seem too much; but when they grow up, and the boughs of the Apple-trees touch each other, it seems wonderful how the small fruits can grow at all; and though it would be preposterous saying they did not derive much injury from such a position, yet I have seen good crops raised under such shade, and an orchard was pointed out to me which was partly shaded by standard Apple and other trees, yet as many as two hundred bushels of Gooseberries were gathered for market from an acre of it, besides the larger fruit, of which I have an imperfect knowledge.

Now, all this to be done on land that resembled a newly-laid-down road, from the multitude of stones, rather than a cultivated garden, may appear strange; while the quantity of larger fruits is almost marvellous at some seasons; but, be it remembered, these do not occur every year, that this county is no more exempt than others from the general uncertainty that hangs over such things; however, here we have good crops of both large and small fruits from the same ground, with the consoling reflection, that if one kind fails it is likely another will prosper, so that the heavy expense attending the culture of such a plan does not lack its reward in some shape or other; but I must leave my notes on individual fruits, &c., till another time. H. B.

POULTRY-YARD REPORTS.

I OBSERVE the return of a poultry-yard at page 169 of your Journal, from "A. Z.," but I do not consider it quite so good as mine. The return of eggs is nearly the same, but his hens are all Cochín-China, and more than half of mine are of inferior breeds.

I observe, too, that his fowls cost him upwards of 9d. each per month, and I reckon mine at something under 6d. My return of eggs last month (May), from sixteen fowls, was 370. My other ten hens were sitting, or with chickens. My present stock is twenty-nine full-grown fowls, ninety chickens, and eighty-five ducks, of different ages, the whole cost me, each day, something under 1s. 6d., viz. :—

	s.	d.
5 lbs. of rice, boiled	0	6
8 quarterns of grains	0	2
4 ditto of pollard, at 1s.	0	3
2 ditto of barley, or wheat	0	5
Food for chickens, say	0	2
	1	6

This will come to a trifle less than "Smith's Mixture," at the end of a year, and I have not a sign of any disease amongst my stock. I may as well mention, that I am killing my young ducks on this food, at six weeks old, weighing upwards of three pounds.

There was an error in the printing of my last report; for "hens and ducks eat in the month," it should have been "hens and ducks sat in the month."—S. P.

With respect to the roup not being contagious, I will just mention, that we have kept Dorking fowls seven years, and in that time have had no disease among them. Last Christmas we unfortunately bought some fowls at the Birmingham show, which arrived with running eyes, and all the symptoms of roup. We thoughtlessly let them go with the rest, thinking it might be only the confinement that affected them; immediately every one of our fowls caught it, one after another, and had it severely, and a fine cock sent to us three months after, when we hoped we had pretty nearly got rid of the complaint, caught it, but fortunately had it lightly. It is curious that the only two that died were the two cocks, though they appeared less ill than the hens, but they died after two or three days illness. The best remedy, after trying all recommended in THE COTTAGE GARDENER, was a spoonful of castor-oil one day, and then feeding them with bread or barleymeal sopped in beer; this brought all round which were not very bad in three or four days. We were more than three months getting rid of it, and during that time had scarcely any eggs. We had a sad loss in one of

our finest hens lately. She had just been let out with her brood of chickens, and was bathing in the sand, when she suddenly started up and fell down backwards, dead. We can assign no cause, unless she got something in her wind-pipe. We lost a fowl once before in the same way, and found a piece of grass in her windpipe.
I send you a summary of my poultry-yard, in case you like to insert it. All January and February the fowls had the roup, which accounts for so few eggs.

Month.	Number of Hens.	Eggs.	Sitting Hens or with Chickens.	No. of Chickens Hatched.	Deaths of Chickens.	Food. Barley. Barleymeal. Groats. Rice.	Expense.
1853.							£ s. d.
January	12	7	..	..	..	..
February	12	23	..	..	..	..
March	12	128	2	..	..	Bushels. Gallons. Quarts. Pound.	
April	12	168	4	10	4		
May	11	88	6	29	9	8 6 8 3	2 2 7

Of the thirteen chickens which died most were squeezed to death by the mother as soon as hatched; two had wry necks and were killed; and one died naturally from drooping and moping.—W. A. E.

IN THE COTTAGE GARDENER of the 2nd of June you wish readers to furnish you with accounts from their poultry-yard similar to "A. Z.'s."

I give you mine for the months of February, March, and April, 1853; and I think it as well to state, that I was from home in the month of February, and had a servant who either stole, or did not properly account for the eggs, as you will perceive by the table underneath.

1853.	Number of Hens. Cochín - China.	No. of Eggs.	Hatched	Died.	Cost per Month.
February	11	54	..	..	£ s. d. 1 Sack of barley 0 18 0
March...	11	258	57	3	{ 2 bushels do. 0 8 0 Grits for chicks 0 3 0
April	11	270	39	2	{ 2 bushels of barley . 0 8 0 Grinding one bhs. for chicks 0 0 6
Total ..	..	582	96	5	£1 17 6

I have a cockerel from Shanghae, who has brought up two broods of chickens, and is now taking to a third brood, my hens beginning to lay twelve to fourteen days after hatching.—G. H. C.

A COTTAGE GARDENER'S HOLIDAY.

How we arrived, or where we came from, no matter; suffice it, the 7th of June, 1853, and on one of the finest mornings that ever enlivened the face of man, we found ourselves at the Woodstock-road Station, waiting for the train to convey us to Oxford. All the world were expected there on that day, so of course we very naturally included our own important selves. Yes, our own important selves; the I singular would appear too forlorn upon an occasion of a great floral gathering, the installation of a Chancellor of the University, and the conferring of, we do not know how many Doctors degrees to boot. No, no, it must be a plural number this time.

Well, we are arrived at the Oxford Station at last, safe as to our own necks, that is one comfort; so with a determination to enjoy ourselves, and remain in peace and good will with all the world, we will fearlessly cypher what observations intrude themselves upon the tip of our pencil, as memoranda in perpetuity of what we saw and thought.

We wend our way to the Bodleian library, having long

had a secret desire to visit this institution, catching, as we proceed, a last farewell view of the procession dying away, with the men in the long black cloaks. How quiet, cool, and refreshing it strikes us, as we enter the vaulted basement of the library; we feel incline to meditate—and surely this is a spot well worthy of meditation—though, perhaps, it is just as well for our readers that we resolve to ascend after a different fashion; but, by all the noble institutions that surrounds us, and cover us, the door is locked! Surely they do not forbid strangers; it is very unfortunate, 20,000 vols. of books, &c., and no access? We are a working man, and our hands are brown and corny; this circumstance may not be in our favour, but we do not intend to leave Oxford without seeing the interior of the library, if it is possible. We will reconnoitre a little in the *cool*, some one may appear presently to unfold the mystery. Two young men now offer their presence, they make for the door, and depart, merely observing, “it is locked.” A good feature, we breathe more freely. Parties now appear, and disappear, all express themselves satisfied with the coolness. Now a man with a key in his hand, he walks quickly to the door, unlocks it, enters, and it closes again; we rush up, it turns on its hinges, and we eagerly enquire of the person ascending the stairs, if it is admissible for strangers to view the library? “Yes, by paying a fee!” To pay, this is an Englishman’s privilege! Without further parley we mount the stone staircase buoyantly. Upon the landing we expend a few glances for the bust of Gibbs (the architect of the building), and then dive at once into the area beneath the cupola. How often we pirouetted and lifted the human countenance is immaterial. There is a loveable rounded proportion in the whole thing, excepting the squareness about the windows. This feature appeared to intrude uncomfortably, though we dare say it is all very proper; still we are inclined to think, where a style of architecture, or what not, is rounded as a principle, the effect becomes marred by *suddenly* introducing the square, and *vice versa*. The title pages of all the books our eyes ran over would prove by far too great an enterprise for our pen. Amongst other objects we noticed two drawings of those giants in the flower way—the *Rafflesia Arnoldi*, and the *Doryanthes excelsa*.

A collection of rare and beautiful sculpture is arranged around the area, embueing the senses with a classical feeling. We particularly contemplated the statue of the “cold and terrible goddess Diana;” more so, probably, because we happen to know that her race is not extinct; though we really and truly hope it may be scarce. Entering by another door which leads us up to the gallery, we again meet with an infinity of books orderly arranged, and “thick as leaves in Vallembrosa;” statuary and sculpture also adorn this circle. We admired a very beautiful Cupid, and wished very much we dared alter his position a little, in order to place an object, and so convey a meaning for his aim—the marble heart of the “cold and terrible goddess” below would thus be made to appear exactly in a line for his arrow’s flight. We strenuously advise the librarian to consider this hint; morals resulting from such a tale might weave incalculable influence in these times of nugget hunting notoriety! A beautiful panoramic view of Oxford, and the surrounding country, unfolds itself from the top of the building; but our time is limited; being anxious to visit the Botanic Gardens before we attend the Horticultural *fête*, we do not ascend there, but plunge once more into the area to take a farewell look at the full-length oil painting of Radcliffe; thus encouraging grateful sentiments towards the memory of a noble benefactor to his country. The theory of the pendulum movement was nicely carried out here in its day; and what a capital place the smooth, unobstructed marble-floor would prove for the table movement! now so popular. Apropos, we could point out to our readers a cottage in Suffolk (all covered with roses), where would be found a bible lying on a mahogany-table, and where, at a particular verse—we think somewhere in Solomon’s Song—is the imprint of a door key, occasioned by the last-mentioned article having formerly (twenty years since) been secured in that spot, for the purpose of allowing two individuals fore-fingers to pass through its eye, and the suspended book spirited to turn either way, according to the magnetic wish of the operators! Is there anything new under the sun?

We depart from the library with regret, with the image of all we saw there indelibly stamped upon the mind, to remain for us so long as our faculties endure. How we envy those fortunate people who have time and opportunity to spend a few hours here occasionally. After a glance at some fragments from the Giant’s Causeway, at the bottom of the stairs, we make our exit from the door, and continue our admiring way down the High street, until arrested in our course at the handsome gateway (completed by Inigo Jones) of the oldest Botanic Garden in Britain; we ring the bell, and are at once admitted, and will at once briefly state those trees, shrubs, and plants displaying their floral beauty at the time; note also what other objects may strike our rapid attention, and start by, not soaring too high at the outset: not a bad principle.

Turning to our right, the humble exotic annuals first claim our attention. Those in bloom were—*Adonis æstivalis*, *Collinsia grandiflora*, *Calandrina Lindleyana*, *Gilia tricolor*, *Iberis pinnata*, *Malcomia maritima*, *Nemophila atomaria*, *N. insignis*, *N. maculata*, *Oxyura chrysanthemoides*, *Platystemon Californicum*, *Silepe pendula*, *Trifolium incarnatum*, *Valerianella cymbecarpa*, and *V. cornucopiae*. The “British herbaceous plants classed according to the Linnean system,” and the “Exotic herbaceous plants grouped according to the natural system,” came next in order. The most prominent of them in bloom were the *Asphodelus aureus*, *Boraginaceæ*, *Euphorbias*, *Iris*, *Geraniaceæ*, *Pæonias*, *Rheum*, and *Rumex*. Four ambulatory parallel strolls upon the turf thus exhaust themselves, and we find ourselves entering the gravel-walk which contains the sun-dial. Dwarf scarlet Geraniums, Petunias, Verbenas, &c. (just recovering from the excessive drought), occupy their respective beds in masses; the Shrubland Rose Petunia taking a place of honour. Next we enter the walk, *par excellence*, which contains the centre aquarium, and contemplate with pity the young water god on the top of the fountain, who has made use of the liquid to a degree sufficient for the wearing away his features beyond all expression; plainly evidencing, to our mind, how too much of a good thing may become prejudicial, whether imbibed internally or externally—water not excepted.

The aquatic plants seemed cramped for room, though, possibly, after having visited the aquarium in the Botanic Gardens, Edinburgh, we may feel a little spoilt in this respect. The third parallel walk now invites our steps, its margins are studded with beds massed with popular annuals, &c., which, by the time this description meets the public eye, will be looking very gay and pretty. Now we raise our head, and revel amongst the British and exotic trees and shrubs. Those we noticed in bloom, were—*Acer monspessulanum* (Maple); *Cerasus padus* (Bird Cherry); *Cerasus vulgaris* (Common Cherry); *Crataegus coccinea* (Scarlet-fruited Thorn); *Castanea* (Horse Chestnut; pink and common); *Mespilus* (Medlar); *Ornus Europa* (Flowering Ash); *Syringa* (Lilacs; common and Persian); *Pyrus aucuparia* (Mountain Ash); *Pavia flava* (Yellow Pavia); *Pyrus arbutifolia*, *P. aria*, *P. Bolhylleriana*, *P. sorbus*, *P. Pinnatifida pendula*, and *P. spectabilis* (Pear-tree varieties).

Having satisfied our vision thus far, we proceed, by the door at the north-east end of the wall, into the “Grass Garden,” where an experimental process at once claims our notice. A skeleton framework, covered with a finish network material, enclosing eight square boxes plunged up to their rims in the ground, each box containing a crop of barley, sown in the following:—No. 1. Red chalk; No. 2. Oolite; No. 3. Brighton chalk; No. 4. Common earth; No. 5. Sand; No. 6. Skiddaw slate; No. 7. Herefordshire iron sand stone; and No. 8. A slate. The crops growing in the common soil, and Herefordshire sand stone, had the best of the race; the Hereford beating by a neck. We shall be curious to learn the result. We have had ocular proof of some of the finest wheat grown on the red clays in Herefordshire; but we do not think the soil (taking it as a county) is considered so favourable for barley. A proverb they are rather proud of, thereabouts, proclaims the county of Hereford to be famous for three things (*viz.*)—“Wheat, Women, and Water.” The first we have said; the latter we can testify to; as to the other more weighty affair,—we know they are capital hands at managing a dairy down

there! The "Clockmaker" is in England! (or was very lately) *perhaps* taking notes; if so, "faith he'll prent them." Look out ladies! He says he has been "pretty much to Slickville lately," for some reason which we leave the fair sex to guess; but "he must make another tour in the provinces," for he "reckons they raise handsomer, and stronger ladies" there than "they do in Connecticut, although they do crack for everlastin' about beatin' all the world in Geese, Gals, and Onions."

But turn we to those *Pæonia Moutans*, floral monopolisers here, comparatively, with the humble grasses, which arrange themselves according to "Lindley's Synopsis." Medical plants take a position around, upon recommendations for their therapeutic virtues. From the boundary of this spot we pause to enjoy a reflection, *proud and deep*, as we view, at one swoop, the colleges of Christ Church and Merton. The lower aquarium is in this vicinity; the gates are locked, so we pass round, skirting the river Cherwell, till the "new houses" (ridge and furrow), open upon us, but not to us, which proves a lucky circumstance, as it is after one o'clock, and the *fête* at Worcester College Gardens opens for the public at two o'clock, so we will even contemplate our first love, and not trust to that dangerous expedient—"two strings for our bow." We will, therefore, according to time, cull a few conspicuous particulars, as seen through the glass. In the "hothouse" we observed Papaw trees in fruit, *Bananas*, &c. The *Citrus*, inhabitants within and without the orangery, appeared to have recently undergone a severe beheading process. We noticed there a collection of *Ferns*, &c. Next, the *Victoria Lily* house and tank, too over-crowded, we thought, with distant connections. Three of its leaves had appeared, looking weakly, each not more than a foot in diameter. Its allied sisters, around the margin of the tank, in bloom, or thinking about it, were—*Nymphaea carulea*, *N. cyanea*, *N. dentata*, and the *Egyptian Lotus*. It would prove acceptable if the names of the three water nymphs were legibly suspended around the tank for the benefit of outsiders; few pass this house, we suspect, without taking a peep at the beauties; and now-a-days, people feel sorry to turn away from a plant without being able to learn its name. The orchid-house is well stocked, and capable of affording quaintness, from *Acropera* to *Zygopetalum*. A glance at the *Roses*, and a young collection of *Coniferæ* (both suffering from the late drought), warn us to proceed, and we find ourselves once more on the space within the garden fronting the buildings; the first in order of which is the stove, whose chief occupants are *Gloxinias*, in varieties, including an unfortunate monkey.

The Professor's house adjoins the stove. How nice to be a Professor! There are three greenhouses; the first minus its namesake varieties; the second occupied with *Ericas*, &c.; and the third chiefly with the *Cactus* species; the entrance gateway and lecture rooms intervene between them, in architectural array, which brings us to the spot where we started from. Pleased and instructed, we pocket our pencil, take a peep at two uncomfortable-looking beans experimentally suspended in two vials of liquid, and decide to depart, but become once more arrested by some menageric sounds proceeding from a cage-like opening in the wall. Monkeys again! A brass plate informed us they were the "*Cercopithecus fuliginosus*," Sooty Monkey, or Mangoley; Africa; and the "*Papio Rhesus*," the Bhunder; East Indies. They appear on very amicable relations with each other, Indian and African brothers literally shaking hands through the wires. The electric wires are accomplishing this feature for all the world. The sooner the conclusion is arrived at the better. What a capital thing it would be, if quarrelsome Emperors could be caged until they were brought to acknowledge the same necessity! By-the-by, some years since, a young gentleman, of facetious memory, expounded for us a remarkable and rare piece of zoological information (*viz*); how men *were* formerly monkeys; but from a habit of sitting they in later days contracted, all semblance of tails became obliterated. Zoology is not to be blamed for suppressing this subject, though some sanguine people independently imagine, even now, they can discover an occasional resemblance.

Outside the garden-gate the prospect is comfortable and substantial. Magdalen College, with its handsome tower, adding reverence and majesty to the scene. We turn down

towards the river, and claim acquaintanceship with a fine specimen of the *Cedrus Deodara*; also with a bright shoal of minnows, rejoicing in the stream below, apparently quite unconscious of the Triton which people are wont to infer amongst them. Our thoughts wandered to the river Lossie (Scotland). How many Tritons would appear amongst you, little fishes, if the likes of you were to be found there? Notwithstanding Lord Byron's anathema, we are sufficiently evil-disposed to wish the power to sacrifice a score of your tiny lives, place you amongst some dry bran in a box to *harden*, and to find ourselves arising by day-break, to-morrow morning, at Lossie mouth (with our best trolling tackle), in order to fish the river as far as the "go-a-head" town of Elgin. If we did not, under these circumstances, arrive there by breakfast-time, with a good appetite, a clear conscience, and a basket well filled with sea, or any other trouts, we are no disciples of Isaac Walton.

Transferring our steps up the High-street we forget all about the fishes; quite different feelings possess us; something—if we express ourselves as an Englishman—something which makes us feel proud of our country, and her noble time-worn institutions. A superior feeling we only to the degree experienced in one place we ever visited, namely—Princess-street, Edinburgh. A parallel superiority of mind and spirit, we engage to predict for nine people out of ten, whenever occasion may afford them opportunity to judge of this for themselves. Minerva, with her immortal *Ægis*, appears to reside in these spots as their natural tributary goddess. This superiority of feeling increases as we ascend Princess-street to the Calton-hill, Edinburgh. So it gradually decreases as we near the corn-market, Oxford. It is curious; but it is a fact.—UPWARDS AND ONWARDS.

(To be continued.)

GAPES IN CHICKENS.

M. R. complains that he loses a great many chickens from "the Gapes." I, too, find that immediately my chickens are three weeks old they are invariably attacked by this disease. Having devoted a great deal of time to discover a cure for it, I find that every (so called) remedy which I have hitherto tried has failed, with the exception of the "feather operation." By this, however, I have saved five out of every six chickens on which I have operated. Having stripped a feather in the manner described by Mr. Tegetmeier, I dip it in spirit of turpentine, thrust it down the windpipe of the chick, and give it a slight twist, after which, by pressing the windpipe, I generally find that some of the worms are "coughed" up.

I have tried smoking them, soaking their wheat in turpentine, and numerous other experiments, but found little or no benefit from them. Probably by smoking a chick before the disease has weakened it, the smoke may cause it to cough, and so expel the worms. I have likewise opened the windpipe, and effected a cure in that way, but this being too "*nice*" an operation, I should not recommend it to be tried, except as a last resource. The worms are found in all parts of the windpipe. I have extracted as many as sixteen from a chicken about a month old. But as to how they get there, I shall not risk an opinion, as I know of one yard in which last year not a single chicken died from this disease, where now only two birds have been reared from seven (fair) broods.

Some few months since you expressed a wish to hear which sex predominated in broods of chickens bred from last year's birds. I can now inform you that out of eighteen Dorkings I have only five pullets.—WILLIAM POPE.

ANATOMIZING LEAVES.

SKELETONIZING leaves, &c., is effected by laying them in *rain-water* until the upper and under skins readily peel off, and the pulp washes away; a little help to clear off the pulp from leaves of stout fibre may be given by means of a painter's fourpenny bristle brush, held between the finger and thumb, in a perpendicular position, and gently tapped up and down upon the leaf, *which must be under water at the*

time. A common milk-pan is the best vessel to use for soaking the leaves and seed-pods in, as it gives a large surface for the action of air, and yet contains water enough to keep a double handful of leaves well-covered; the time that leaves require for soaking depends much on the situation of the pans, and the kind of leaf; a full south aspect, unshaded, is desirable, and the more fetid the water that contains the leaves the better, except for the oak, and that requires to have the water changed once a week, as it possesses some substance (Tannin) which preserves rather than decays other vegetable matter. The chief art in this anatomizing, is to take your subjects *when their exterior is fully decayed, and the interior untouched*; after well washing them in several waters they should be bleached in a solution of chloride of lime; where that is not found powerful enough, a few drops of oil of vitriol may be added. An ivy, or pear-leaf, is about the easiest to skeletonize, and they do not require more than four or five weeks' soaking; all beginners of this work must remember to keep their leaves *under water* whilst taking off the skin, or the fibre is apt to tear.

A SKELETONIZER.

POULTRY SHOW AT SWAFFHAM, NORFOLK.

ON Wednesday, June 22nd, a good show of poultry, for a first exhibition, took place under the auspices of the Norfolk Agricultural Society. As in all first exhibitions of the kind, a little experience is required, as was the case at Swaffham, for had the entry for pens been, as at other exhibitions, three or four shillings, instead of being confined to members and subscribers of £1 11s. 6d., a more numerous entry would have been the result. There was little competition, except in the Cochon chicken class, in which Messrs. Fairlie, Pillans, Reynolds, H. Gilbert, R. Gilbert, and other exhibitors of repute, sent beautiful specimens. The following were the fortunate exhibitors in their respective classes.

Judge, G. S. Andrews, Esq., Dorchester.

Class 72.—SPANISH. Cock and two Hens.

First prize, Rev. J. Bulwer.

Class 75.—DORKINGS. Cock and two Hens.

First prize, F. L. Astley, Esq. Second prize, J. Fairlie, Esq.

Class 77.—DORKING, Chickens.

First prize, W. P. Pillans, Esq.

Class 78.—SHANGHAE. Cock and two Hens.

First prize, J. Fairlie, Esq. Second prize, W. P. Pillans, Esq.

Class 81.—GOLDEN-PENCILLED HAMBURGHES.

First prize, W. P. Pillans, Esq.

Class 84.—SILVER-PENCILLED HAMBURGHES. Cock and two Hens.

First prize, Mr. N. G. Barthropp. Second prize, Rev. G. L. Fellowes.

Class 86.—SILVER-SPANGLED HAMBURGH CHICKENS.

Prize, R. Marsham, Esq.

TURKEYS. (Old).

First and second prizes, J. Fairlie, Esq.

TURKEY POULTS.

Prize, J. Fairlie, Esq.

GOSLINGS.

Prize, J. Fairlie, Esq.

Class 96.—AYLESBURY DUCKS.

Prize, J. Fairlie, Esq.

Class 103.—BANTAMS (White).

First prize, Rev. P. Gurdon.

Class 105.—BANTAMS (Black).

Prize, J. Fairlie, Esq.

THE OPERATION FOR CROP-BOUND.

I BEG to make known a more simple and easy, as well as an equally efficacious, mode of relieving the condition of crop-bound in Fowls. The plan usually adopted is unnecessarily complicated, and requires some nicety in its due performance. I mean the laying open the crop to the unwarrantable extent of two inches, at its lowest part (as recommended in *THE COTTAGE GARDENER*), and afterwards sewing up the wound. The washing out of the crop is also

quite uncalled for. The operation which I advise is, simply the making of a very small incision with a lancet, and that at the upper part of the crop; say, at least, two-thirds from its most depending portion; and then, by a very little manipulation with the fingers, and with the occasional aid of a pin, the turgid grain is readily extracted, and no sewing up of the wound is required. It will be admitted that the rendering unnecessary the use of the needle and thread is a great simplification of the process; and experience has shewn me that the skin of the crop is a part that rapidly unites when cut open.

The required conditions for the success of the operation are, that the wound be small, scarcely twice the length of a barley corn; that it be made at the upper part of the crop; and that the food and drink be afterwards allowed but in moderate quantities at a time, till the wound be healed. The rationale of these conditions are sufficiently obvious; the small wound soon heals of itself—its position secures it from being distended or opened by the contents of the crop—these contents being in moderate quantity do not extend to the wound.

I last year, successfully, thus relieved a crop-bound Sebright pullet; the facility of the plan, and the rapidity of the cure were such as to induce me now to urge it upon the notice of the readers of *THE COTTAGE GARDENER*.

If fowls are susceptible of gratitude, this case of the Sebright pullet affords an illustration; being an oddling amongst a clutch of Polands, it was a good deal domineered over, so that it became scared and wild as a Partridge; after the operation and cure an immediate change came over it, and it became most docile and attached to me. So much so that it generally perches on my shoulder as soon as I visit the lawn; nor will it feed with the rest of its companions if I am present, but literally pecks at, and pulls my ears, till I offer it some of the food in my hand, when, with a gratified chuckle of success, it slides down my arm to the cherished hand and handful.—F. R. HORNER, *Hull*.

THE ROUP IN FOWLS CONTAGIOUS.

SEEING in your valuable Journal a letter from "Linus," in favour of the roup being contagious, I can give you a little of my experience on the matter. In the winter I got three Polish hens and a cock from a dealer, one of the hens, on arrival, had evident signs of the roup, and was very ill; however, she recovered; during the illness of the Polish hen, I got, at different times, six or seven other hens, all of which had the roup, one or two of them died, and others I killed as a means of ridding myself of the disease. The weather certainly was wet and stormy all the time, but no roup shewed itself until the arrival of the Polish hen before mentioned. I should certainly say that the roup is contagious.

T. K. A.

[Mr. Roscoe, manager of Capt. Hornby's poultry, and who has more personal and ancestral experience than any one living, has no doubt that roup is contagious. We shall be glad of facts either for or against the opinion.—ED. C. G.]

OUR MONTHLY CONTEMPORARIES.

The Scottish Florist for May is an excellent number. Among other amusing and instructive articles is one by Mr. Cuthill, on *Melon and Cucumber-growing for Covent-Garden*. He says—"I was the first that ever had a Bank-sian medal from the Horticultural Society for a Melon cut on the 10th of May, 1837, and exhibited on the 13th. The sort was Cuthill's Early Scarlet Flesh. This I have had since 1830. It is very hardy, very easy of growth, and most productive of fruit, and is the first to be seen in Covent-Garden at the present day. It gained a prize two years ago at Regent's Park, and one at Chiswick in July, so that the flavour is not amiss. I do hope that gardeners will not think that I am endeavouring to instruct them; I merely say what I have done with these two plants.

"Several mornings, at the dearest time, I have brought home £5 for Cucumbers only, and the same for Melons; but then the expense must be considered. Those very

years it cost me, before I cut a fruit, upwards of £30 for all things wanted. At that time, 5s. for a Cucumber was considered little; now, at the same season, 8d. to 1s. 6d. is all that can be got. Market-gardeners all grow Cucumbers and Melons; many of the very large ones, 500 lights, which are all grown on beds of dung, and generally planted-out in March: the dung is built up in splendid style by those accustomed to it, four feet at back, three in front, leaving about four feet between the beds, those intervals to be filled up with dung, as the heat of the beds decline, and then to remain all the summer. This immense mass of fermenting matter gives a good heat all the summer, as well as forms a pathway. The sort grown some years back was from six to eight inches long; but now they are growing the Black Spine, which, in frames, they grow to about ten to eleven inches. This Black Spine of mine I have sent to market-gardeners in Essex, and for ridge-growing it has answered well. Since I have been a grower for my own profit, I never could see the use of a long Cucumber; they are, in my opinion, less profitable either for market or private purposes.

"In conclusion, since I have kept a brace of bantams in the Melon ground and sheds, I have not been so much annoyed by the wood-lice, as those birds are very eager after wood-lice, as well as other insects. I think that even in a private garden those birds might be kept within their proper bounds, as wire-netting is so cheap. Wood-lice are the gardener's greatest enemy; nothing seems to disagree with them—Melons, Strawberries, Cucumbers, Mushrooms—they are always eating and always breeding. Their immediate destruction can only be effected by boiling water, which cannot be put in practice amongst crops. Toads are most useful animals; but as they so often die in hot pits, and, if not, creep away, they become expensive. I have offered the Norwood and Sydenham carters four shillings a-dozen this year, but they have not found one even up to April. A toad is of immense value to a gardener or farmer, and ought never to be destroyed."

TO CORRESPONDENTS.

. We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

GRAPE VINE PRUNING.—A. B. asks, "Is it a good practice, after cutting a bunch of Grapes, to cut back the shoot to about two or three eyes?" It is a very good practice when the Vines are on the spurting plan, and the gardener knows the exact ripeness of the wood. We have occasionally followed the practice for twenty years, and almost every one follows it with the very late Grapes—that is, those in use from November to March. The reason is, that as long as the sap is in motion it will accumulate and strengthen the lower buds for next season's crop.

ROSES (J. B. W.).—All the Roses you name, Geant des Batailles, Great Western, Persian Yellow, Prince Albert, Noisette Jaune d'Epris, Pourpre de Tyre, Due d'Orleans, Black Damask, Cabbage, White Bath Moss, and Coloured Moss Rose, will do very well budded on *Felicite Perpetual*, *Rampant*, or *Princess Maria*, except the Persian Yellow. Standard of Marengo is the best dark crimson you can add to your stock, after that *La Reine*, Duchess of Sutherland, Mrs. Elliot, Barron Prevost, Paul's Queen Victoria, Pio Nono, Chenedole, Blairi No. 2. Boquet de Flora, Pierre de St. Cyr, William Jesse, Madame Laffay, and Souvenir de la Malmaison. This last, and Queen Victoria, are all but white; the rest are different shades of rose. Now and for the next five weeks is a good time to bud all these. Do not bud them on the strongest leaders, only on side-shoots, which you can cut back to the new buds. It is of little use budding on these strong growers unless the parts budded on are thus cut in.

CURIOUS GALLOPIDE.—A Fancier, who sends us his address, says, "Some little time back a curious circumstance occurred, which resulted in the death of a fine young Spanish cock, belonging to Mr. Beesley, of this city (Oxford), which I think will illustrate Mr. Wingfield's remark as to the "mill-like power" of the stomachs of fowl. A piece of silk "twist" (such as tailor's use), doubled, and about seven or eight inches in length, with one end tied in a large complicated knot, about the size of a horse bean, was swallowed by the bird. The knot passed into the stomach, but the other end slipped its looped end over the barb of the tongue, and held it firmly. Mr. Beesley noticed the bird moping about in the evening, and gave it a small piece of sopped bread, put it in its mouth, which it ate, and he then put it to roost with the others, but found it dead on visiting his poultry in the morning. We had a *post mortem* examination, and then found that the tongue of the bird had been pulled completely down its throat, and regularly torn out by the root by the force of its digestive organs."

AMARYLLIS (W. G.).—The bulb from Madeira is one of the numerous varieties of *Hippeastrum Johnsonii* an English seedling, but now in all

temperate parts of the world. Being in flower now (28th June) shows that it was at rest last winter, that it began to grow very late this spring, or else the situation was very cool for it. Keep on watering it till the end of September, unless the leaves turn yellow before then. Keep it dry and warm in the pot all the winter, and to the end of March, unless you have means to force it, in which case you may begin with it as early as January. When it begins to grow after a long rest is the right time to take off the side bulbs, but leave three or four of these to make a large specimen.

HARRY RHODODENDRONS (C. J. M.).—The best varieties for your purpose were mentioned last week, but if your nurseryman cannot provide them, tell him to send you the best dark purple, and the scarlet seedlings from *R. Catawbiense*. Be sure, however, to ask the prices before you purchase, as some of these sell rather high. We know nothing at present among hardy evergreens "out of the common," except Standish's *Skimia japonica* and Veitch's *Philesia buxifolia*, unless the *Sikkim Rhododendrons* should all turn out to be hardy.

PELARGONIUMS.—M. D. P. asks—"Is it Beck's or Drury's 'Pearl' that THE COTTAGE GARDENER commends?" We cannot say whether *Pearl* was raised by Drury, Beck, or whom. The *Pearl* we "commend" is the same as that we have mentioned all along for three or four years, and we know of no other. "Is it No. 1 or No. 2 'Mont Blanc' that is the winning flower?" We repeat the last answer to this question also. "Is the 'Zaria' described vol. viii., page 193, and the 'Zaria' of page 26, vol. 10, the same, or is it so sportive?" Yes, certainly, and the descriptions are by a first-rate florist; but whether the "ground colour" is "a pleasing buff white," as first described, or "a warm pink ground colour," as in the shorter description, we cannot say; for, to tell the truth, *Zaria* is not yet printed in our memory, but we shall have it there very shortly, and you shall hear of it as a lady would describe it, and like to have it described.

HARDIER ORCHIDS (Rev. J. N. W.).—Some of the more hardy orchids may be grown in a glass case, in a warm greenhouse. You mention hops, or peat, as fermenting substances to give heat to the glass case. We fear neither would answer; why not use spent tanners' bark? The confined atmosphere of such a glass case, so situated, would be too damp for *Glaxias*, unless you have means of giving plenty of air. The following orchids would answer your purpose:—1, *Bletia hyacinthiflora*; 2, *Cattleya Mossia*; 3, *C. crispata*; 4, *C. intermedia*; 5, *Epidendrum macrochylum*; 6, *Dendrobium nobile*; 7, *D. densiflorum*; 8, *Oncidium flexuosum*. *Peristeria elata*, we fear, would be too large for your case. The flower-stem is three feet high, and the leaves are very large. Your queries about the *Saffron plant* of South America, and the *Flowering Cane* from the same country, we will answer as soon as we can ascertain what kinds of plants produce them. Could you furnish some information about them, and send a leaf of each?

BALSAM CULTURE (A Constant Reader).—By no means pinch off the tops of your Balsams. Grow them stout with numerous side-shoots, and they will form symmetrical plants. They will flower no sooner by pinching off the tops. Give them weak manure-water every alternate time of watering.

LIST OF ROSES (T. W. E.).—As the list is of no use to any one but yourself, we cannot spare room to answer it in full; but if you will number it, we shall put our classes to the numbers. We make only two classes of all the dwarf Summer Roses—Moss and no Moss; of Autumn Roses, we make Chinas, Teas, Noisettes, Bourbons, and Hybrid Perpetuals. Gallica, Alba, Provence, Hybrid Provence, Hybrid China, Hybrid Bourbon, Damask, and the rest of such distinctions are an abomination that we cannot lend our aid in explaining more than is being attempted by Mr. Appleby. Indeed, there are only three classes among all Roses; the first is Summer Roses, the second Climbers, and the third Autumnal Roses; and the sections of those classes are by far too numerous, and only serve to puzzle the public.

CAPE BULBS (H. W.).—This is a bad time of the year to receive Cape bulbs. If the *Tritonias*, *Irias*, *Babianus*, and *Morea*, are not in growth, keep them dry as they are till early in September, and then pot them five bulbs in a forty-eight sized pot, except *Morea*, and three of them will be enough in such a pot; the soil to be all peat, except one-sixth of sand; and the front of the coldest vinery in Guernsey is your best situation for them. If, on the other hand, any of these have leaves or new roots, pot them, as above, at once, and keep them in a cold frame all the summer, with no more water than will just keep them going; all of them rest during our summers. The *Gladiolus* is not worth growing; but you may like to keep it, and you may pot it at once; also the *Ornithogalum*, not worth much, and the *Watsonias*, the three kinds, in one-half peat and the other half light sandy loam, but they will do in peat or loam. The *Satyrium roseum* is worth all the rest, but is a most difficult plant to manage well; peat with a little sand is best for it, but do not pot it until you see signs of life.

NAMES OF CROSS-BRED FLOWERS.—Mr. A. Henderson, of the Wellington Road Nursery, has written to Mr. Beaton as follows:—"I see, at page 218 in THE COTTAGE GARDENER, you must have mistaken the name of *Geranium glaucum grandiflorum*, as exhibited on the last Chiswick day. The *intermedium* being inclosed in brackets (), was intended to signify a synonymous name, caused by having been exhibited as a seedling under that name, and again, by mistake, re-named and exhibited under the name now offered for such." Mr. Beaton says, in reply:—"I apologise for this mistake; and I am sorry that I should ever make a mistake or mistatement about such names. The plan of inserting synonyms within brackets, on a tally, was never practised before at an exhibition, as far as I can recollect, and I protest against it at once, as a very bad plan indeed. Whatever the intention may be, the practice is only calculated to mislead the public. Every plant that was shown that day had as much right to have its secondary names given as this seedling; and if that were so, it would just take all our time to read them off, without looking at the plants at all. Nurserymen and florists, I am

quite sure, have not the slightest idea of how ridiculous, and even disgusting, some of their pet names appear to ladies who are their best patrons, because ladies do not speak of such things out of their own order, except to their gardeners. "Defiance," for instance, is a favourite name with florists, but ladies invariably disapprove of it. Long, dog-latin names to garden seedlings are quite out of place, while bastard French ones are silly or pedantic; and I shall continue to ridicule such practices to the end of the chapter.—D. BEATON."

GLASGOW CATTLE AND POULTRY SHOW.—An anonymous Correspondent says—"They took place on 14th of June, and, expecting to see a few good fowls, I went with the crowd, and certainly, if I was disappointed, it must have been my own fault, for all that was promised was prizes for the *best pair of fowls of any breed*, not even an attempt at distinction. Under these circumstances, it was not strange that only mongrels made their appearance and carried off the honours of the day. Had they only offered a prize for the *best horse of any breed*, who, I would ask, would have sent horses to compete? and who would have been the impartial judges? and as that was the course pursued with *chucky*, as a matter of course, nobody thought of sending distinct breeds. The poultry mania has, assuredly, not reached this city of the west, or such a prize list would not have disgraced the members of the Glasgow Agricultural Show. Let us hope, however, that at their next annual meeting (which, in horses and cattle, could hardly be an improvement on this), they will have obtained a little more insight into the different and distinct breed of poultry, now everywhere to be met with pure and perfectly distinct, even as much so as the far-famed Clydesdale horse, with his shaggy mane and legs, and the smooth, sleek racer."

SEA-KALE FORCING (*A Surrey Subscriber*).—*Tree-leaves* were apt to heat too suddenly, and then rot, last season, owing to so much wet; but, nevertheless, we managed our Sea-kale with them, by not having a thick layer, and turning them frequently. Every gardener has his troubles if he must depend on the farm-yard for manure. The garden and the farm become separate interests; and the less the two superintendents have to do with each other the better. *Tan* is as good as dung for forcing Sea-kale, and a two-light box will yield you a large supply; half-a-light would be enough at a time, if the roots are closely packed; and thus you might fill your lights at four times a week between the times. You would require at least from two-and-a-half to three feet of tan. Instead of covering the tops with tan, or a thickness of ashes either, it would be better to darken the box completely. In fact, a few boards, old doors, &c., so as you can exclude light, is just as good for the purpose as the finest garden-frame in the world. Do not mix old and new tan together, or the heat will be too violent, and of short continuance. You may place old tan on the top for the roots to be placed in. The same roots will not do the following year, unless they are planted-out early, and well-attended to in summer; but they will be fine plants for a second season. Although involving a little more trouble, this lifting and transplanting mode is more economical and certain than forcing in the beds, unless the beds are furnished with pigeon-holed walls, and heated by linings or hot water. The same beds will do for Potatoes and Carrots afterwards, but you cannot mix the tan with advantage; and instead of attempting to make a bed large enough to suit all these purposes at first, it is much better to keep a supply of tan dry in a shed, and add a little, and fresh stir the material every time you change your Sea-kale plants, or when you turn them all out and bring in the bed for Potatoes. Of course, for the late and early Carrots, light will be indispensable.

BEES SWARMING—HOW TO PREVENT.—*C. T.* says—"This season I possessed a strong hive of bees, and about two months back I cut a hole in the top (*being a common straw hive*), for the purpose of giving more room, and for filling glasses—the size of the glass was ten-and-a-half inches high, and eighteen inches round—which they began about the 24th of May, and have nearly filled it; and I hoped, by having it ventilated at top, to prevent their swarming, but for some days they have hung outside, and on Sunday morning they swarmed. Can you inform me of any certain plan to prevent their swarming?" Had you given your bees a box of three-and-a-half or four inches deep between the glass and the hive, or had you even raised the glass from the hive one-eighth of an inch, swarming would, in all probability, have been prevented. Room and ventilation, if properly attended to, will generally prevent swarming.—J. H. P.

INACTIVE BEES.—*An Amateur* says:—"I have several hives of bees which are doing well, with the exception of one. It was a new swarm two years ago, and is in one of Taylor's improved bar hives. Last year it produced a tolerable stock of honey, and threw off a swarm. At present the bees are inactive, and make no progress whatever. It is not a strong hive, and the numbers do not appear to increase." The inactivity of your bees arises, in all probability, from the loss of the queen, or from her not being a healthy one. Your remedy will be to join a cast to them, either from your own, or your neighbour's apiary, and vigorous working will immediately follow. Payne's "Bee-keepers Guide" will direct you in doing it.

CAT NUISANCE (*A Constant Subscriber, Hammersmith*).—We can only say that we know a gentleman who sets a large drop trap in his garden, and when they see it down, the gardener, without looking into it, puts it under water for half-an-hour. When taken out he is surprised to find that a cat had got into it. If your *Cockerel* decreases in weight, the weakness of the legs you describe is a very bad symptom. If he keeps up his weight he may recover, if supplied freely with nourishing food.

HATCHING MACHINES (*Thomas*).—Apply to Mr. Cantelo, Leicester Square, London. Ask him if he knows of a single amateur who continues to use them.

SPANISH CHICKENS (*W. Curtis*).—We never knew these walk upon their heels, but frequently have Shanghae Chickens done so. If fed nourishingly, and kept out of the cold and damp, they recovered their strength, and walked on their feet when about a fortnight older.

ROSE CUTTINGS (1001).—Early spring is the best time for planting these. Two buds under ground, and one above ground, are the best. They do not require bottom-heat.

DIRECTIONS (*Rhyd-y-Gors*).—The direction is Mr. John Turner, Parkwood Springs, Neepsend, Sheffield.

FERNS IN GLASS CASES (*Curiositas*).—Wipe the inside of the glass dry every morning, and let the foliage get dry once in the day, and the mildew will disappear.

UNFRUITFUL TREES (*K.*).—There is evidently a deficient supply of sap to the blossom, as that where the return of the sap was checked by a partial destruction of the bark has become productive. The subsoil requires draining, or some other cause renders the root-action of your trees inefficient.

PEA SOWING (*Georgius*).—It is useless to think of sowing any variety of Peas now. The autumn night frosts and mildew would destroy them.

DOUBLE-YOLKED EGGS.—Mr. Saunders, of Cowes, Isle of Wight, says:—"I placed a large speckled Dorking hen with a young white Cochin cock, several of her eggs were double-yolked. One measured seven inches in circumference, and weighed as nearly as possible a quarter of a pound. I set one apparently double-yolked egg, but prior to hatching accidentally broke it, finding two chickens alive in it. A friend tells me that amongst his speckled Dorkings, he frequently finds two live chicks in one egg, but that they are either too weak to break the shell, or kill each other in attempting to do so, as he never hatched any alive."

CROCUS-SEED SOWING (*G. R.*).—Sow in October, in a light, rich, open border. The seedlings will flower the second year. See very full directions in *The Cottage Gardeners' Dictionary*.

RHUBARB WINE (*Rowland B.*).—As you have bottled it, we should allow it to remain bottled until age reduces the sweetness, which will be in another twelvemonth. Good wine cannot be made in a day.

OFFICERS OF POULTRY SOCIETIES (*J. D.*).—The officers of these Societies very usually exhibit at the Shows of the Societies to which they belong. There is no reason against it, except such as would exclude the officers of local Horticultural Societies from similarly exhibiting; yet these almost always do so.

GOLD AND SILVER PHEASANTS (*A. M.*).—You may feed these and their chicks just as you do common Pheasants and their broods. We should not give them bread and milk, but all the other foods you mention are unobjectionable.

WINTER BARLEY (*Cymro*).—It is a distinct variety, sown in the autumn for early feed, or to be cut for soiling cattle in the spring. It may be procured of any seedsman in almost every district of England.—J. B.

SLUGS (*A Subscriber*).—Dusting over the surface of the beds with quick-lime is the only preventive.

INSECT (*Mary*).—It is the *Gordian Worm* (*Gordius aquaticus*). There is a drawing and description of it in our 93rd number.

ARCHANGEL PIGEONS (*A Constant Reader*).—The Archangel Pigeons that we have had opportunities of observing have not been subject to diarrhoea, or other diseases, beyond the ordinary lot of the Columbidae generally. We have, however, made inquiries of others who have kept these birds, and will communicate the result. W.

PHLOXES, &c. (*H.*).—Your plant enclosed to us is not a Phlox, but a very pretty little rock plant, *Helianthemum tomentosum*; the other kind you mention is, probably, *H. mutabile*. They all root readily from cuttings, at the present season, if planted in the shade and under a glass. *Phlox procumbens*, and *P. subulata*, you can obtain of any respectable nurseryman. Mr. Weaver tells us of the *Gentianella*, that he never sees it do so well as when a small bed is allotted to it by itself, and the bed made good previously to planting it out. The soil may be sandy loam, mixed with a little leaf mould, or, if a little peat be mixed also all the better. He does nothing more to his, in a low, wet situation, for years, except giving a little top-dressing yearly, and taking care that the plants are never over-shaded with weeds, or other flowers planted near them.

NAMES OF PLANTS (*Laneastriensis*).—The blue flower *Thymus serpyllum*, or wild Thyme. The yellow flower *Barbarea vulgaris*, or Herb St. Barbara. A double variety of this is the garden plant *Yellow Rocket*. (*D. G. C.*)—Your No. 1 is the *Soltia heterophylla*; a green house plant properly, though it may do out-of-doors under a warm wall, outside the greenhouse. No. 2 is a hardy out-door plant, *Saponaria oeymoides*, and a very nice thing upon a rockery or lump of stones. No. 3, *Lycopodium ewstium*, a very pretty stove club Moss. (*F. W. G.*)—1. *Pelargonium hybridum*. 3. *Pelargonium fulgidum*. 4. *Pyrethrum parthenium*, var. plenum. 8. *Mesembryanthemum floribundum*. We cannot undertake to name florists' flowers from single flowers; and the same answer applies to your other specimens, sent under the reversed initials "G. W. F." (*Violetta*).—Yours is *Trigonella rathenica*. (*W. W. Ledger*).—The small white flower, *Saxifraga cotyledon*; the other a variety of *Thymus serpyllum*. (*C. H. G.*)—We cannot name specimens of Florists' *Pelargoniums* from such specimens. No. 20 is *Alyssum maritimum*; and 15 is *Pelargonium denticulatum*.

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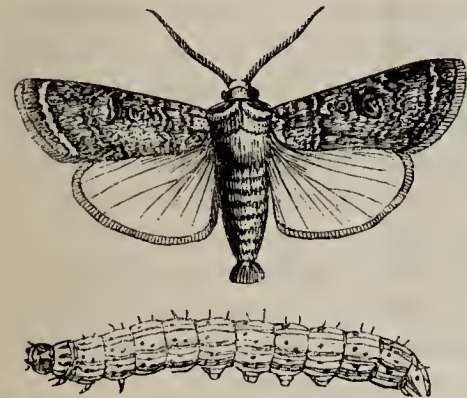
WEEKLY CALENDAR.

M D	W D	JULY 14—20, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
14	Th	Large Pale Shark.	29.993 — 29.923	81—69	E.	20	1	10	11 54	8	5 30	195
15	F	St. Swithin.	29.939 — 29.898	87—53	S.	—	2	9	morn.	9	5 36	196
16	S	Bordered Gothic; Norfolk.	29.916 — 29.747	87—62	E.	1.60	3	8	0 16	10	5 42	197
17	SUN	S SUNDAY AFTER TRINITY.	29.811 — 29.738	73—52	S.W.	01	5	7	0 45	11	5 47	198
18	M	Peach Blossom; wood sides.	29.890 — 29.820	70—50	W.	—	6	6	1 23	12	5 52	199
19	Tu	Willow Beauty; woods.	30.003 — 29.945	77—56	S.W.	—	7	5	2 14	13	5 57	200
20	W	Light Emerald; bushy pl.	30.034 — 29.973	74—54	S.W.	91	8	4	rises.	☺	6 0	201

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 74.3° and 52.6° respectively. The greatest heat, 94°, occurred on the 17th in 1834; and the lowest cold, 39°, on the 18th in 1851. During the period 104 days were fine, and on 78 rain fell.

THE DART MOTH.

THIS insect known also as the Winter Moth, and by the more appropriate name of the Corn Moth, is the *Agrotis segetum* of entomologists. When the farmer finds his young wheat withering away before the attacks of some underground enemy, he usually attributes the destruction to “the Wireworm.” Almost as frequently, however, the real enemy is the caterpillar of the Dart Moth, and so serious are its inroads, that some fifteen years since the Russian government offered a reward for the discovery of a means of destroying this marauder, and in 1839, it was the subject of the London Entomological Society’s Prize Essay.



“This caterpillar attacks both the leaves and roots of the corn; by eating them off destroys the crop, and causes whole fields to be ploughed up. From many observations, the corn suffers most in rich soils in warm situations, and particularly in those fields which were early sown. It does not confine its ravages to corn alone, but attacks the roots of lettuce, turnips, and spinach; and on this account deserves no less the attention of the kitchen-gardener than that of the farmer.

“The moth appears generally in the month of August in gardens and fields, sitting quietly on the ground in the day time, and flying about and pairing at night.

“When at rest its wings are folded together flat over the body; it is then nearly an inch long, and half-an-inch wide. Its colours are dirty gray, and dark brown, or earth-colour, except on the under wings, which are covered as it sits, and which are sometimes whitish-gray, sometimes cream-colour. On the upper wings a faint, blackish, ring-like mark is observed, and a cone-shaped spot on a wavy line, a kidney-shaped stain almost in the middle, and beyond this, towards the lower edge, two other wavy or notched transverse lines. The male is distinguished from the female by a thinner

body and pectinated antennæ, while in the latter the antennæ are bristle-shaped.

“Ten or fourteen days after the eggs are laid in the earth the young caterpillars are hatched, and consequently they appear about the end of August, or beginning of September. They eat at first the roots of various sorts of grasses, for want of corn; attacking the tender roots of the corn in September and October, when it begins to spring. At the approach of the cold weather they descend two or three inches deep into the earth, and prepare themselves an oval cavity, in which they pass the winter, without doing any injury. In the beginning of spring they leave their winter quarters, and feed again for a time on the roots of the corn and grass, without materially injuring the stronger plants. At the end of May or beginning of June they prepare to enter the pupa state, which change is accomplished in a small hollow in the earth. After four weeks the above-described moth bursts from a brown pupa. The caterpillar measures, when fully grown, an-inch-and-a-half in length, and is of the thickness of a strong quill, cylindrical, somewhat thinner towards the posterior end; it has six pectoral and ten ventral feet, the body is smooth shining, and free from hair. Its colours are chiefly brown and dark gray, which alternate in broad stripes along the body, but which are at the same time intermingled in some degree. On the middle of the back a pale stripe stretches from the head to the other extremity, bordered on each side by a dark line. Near to this stripe on each segment are four faint black dots, the first pair of which approach closer together, and are so much smaller than the others, that they are sometimes scarcely visible.

“Near the posterior pair, yellowish spots are generally seen. Below at the sides are the usual spiracula, or breathing holes, looking like black dots, and at the side of each there is another blackish dot. The feet are brownish gray. The arched, yellowish-brown head, is marked with two stripes, composed of small dark brown combined dots, running from the neck towards the mouth.

“We must only further observe, that this caterpillar, like most other larvæ of night-moths, shuns daylight, and conceals itself in the day-time under clods of earth, stones, leaves, and even in the earth, and only comes forth from its hiding-place towards evening.” (*Kollar and Westwood.*)

Many remedies have been suggested, but none appear effectual but the application of lime and hand-picking.

SOME weeks since we reported briefly the proceedings of a preliminary meeting held for the purpose of establishing a Society to watch over the interests of exhibitors at the great Metropolitan Horticultural Exhibitions. Since then, according to the following Report, it has somewhat enlarged its objects:—

“The want of united exertions on the part of the exhibitors at the Metropolitan Exhibitions having been long manifest, it has been resolved to form a society of the exhibitors generally, having for its object the promotion of horticulture and floriculture, and, as a means to this end, the support and improvement of the

Metropolitan Exhibitions; and also to obtain for the exhibitors generally a fair reward for their labours, as well as to watch over and protect their interests relative to the exhibitions. At a meeting held at the Chester Arms, on Wednesday, the 29th of June, 1853, the following Rules for the guidance of the Society were unanimously agreed to:—

“1. That the Society shall consist of exhibitors at the Metropolitan Exhibitions of Horticultural and Floricultural Productions, and be called THE EXHIBITORS’ SOCIETY.

“2. That the affairs of the Society shall be con-

ducted by a committee of twenty-four members, and a honorary secretary and treasurer: five to form a quorum. Such committee to be elected annually in January.

"3. That a general meeting of the Society be called by the honorary secretary to elect such committee.

"4. That the committee meet on the days of the Exhibition of the Botanic Society, at Regent's Park, at eleven o'clock, and at such other times and places as may be deemed necessary.

"5. That exhibitors wishing to become members of the Society are requested to communicate the same in writing to the honorary secretary.

"6. That the subscription of the members be 2s. 6d. annually, such subscription to be due the 1st of January in each year.

"7. That any member having a practical suggestion for, or a complaint against, any Horticultural or Floricultural Society, shall make the same personally on any of the days fixed for the meeting of the committee, or in writing to the honorary secretary.

"8. That no complaint of any exhibitor can or will be entertained by the committee, unless such exhibitor shall have been a member at the time of the cause of complaint taking place.

"9. That if the committee consider the suggestion of any member desirable, it shall be conveyed through the honorary secretary to the Society or Societies to which it may refer; and likewise, in case of complaint against any Society, if the committee shall think the member entitled to redress, they shall use their best endeavours to obtain the same for him.

"10. That the secretary be empowered to call a special general meeting of the Society on the receipt of a requisition signed by twelve members, such requisition to contain the distinct proposition or propositions to be brought before such special general meeting, when no other business than that contained in such requisition can or will be entered upon; seven days notice to be given to each member.

"11. That the rules of the Society shall not be altered, except at the general annual or special general meetings of the members of the Society. The committee for the time being shall be empowered to make bye-laws, or alter their bye-laws, as they may consider necessary.

"12. Every member, by his membership, binds himself to support the decisions of the committee on all occasions when required.

"Such were the rules agreed to at the above meeting. A committee of twenty-four was elected, and, therefore, the Society may be considered as formed; and the committee have power given them to act according to the above rules forthwith. The meeting adjourned to Saturday, the 9th of July next, to meet at the Crown and Anchor, Turnham Green, near Chiswick."

We have taken some pains to ascertain the grievances which have given birth to such a society, for we were certain that no body of Englishmen would band together for so apparently ungracious an object, unless

the grievances were felt very generally and severely. We find that we were not mistaken in our conclusion; but, as we intend scrupulously to avoid mixing up any personalities with this subject, we abstain from citing cases, and from mentioning names.

Among the grievances complained of are the following:—

1st. The want of tent-room; flowers and plants having to be placed on both sides of the tents, as well as on the centre tables.

2nd. The unequal distribution of prizes; some plants being rewarded more than they are worth, and others not sufficiently so.

3rd. The exhibitors having no control over selecting judges, especially at Chiswick; men being very frequently chosen for the office who are not competent. They are appointed by the Council, and have been for several years, to judge orchids, and other plants, of which they have not sufficient knowledge. Also, judges are appointed for other subjects who are exhibitors themselves, though not in that particular class for which they are appointed censors.

4th. The officers of the different societies pay no attention to the representations of individuals, stating, as a reason, that if they paid attention to the representations of one they would offend others.

If these complaints are founded on truth they require a prompt remedy, because they admit of suspicions that favouritism and undue bias may be exercised; and we advise not only that the remedy should be applied, but that the Councils of the Society should appoint a small committee to ascertain, by evidence from "The Exhibitors' Society," whether, at such Society's exhibitions, there is that courtesy shown by their officers which is not only due to exhibitors, but is absolutely needed for the well-being of such societies.

We have spoken of "The Exhibitors' Society" as "apparently ungracious," because, it does seem to those who merely glance over such subjects to be rather too bad that those who contend for prizes should endeavour to control the mode and proportions in which they are offered and awarded. Those, however, who consider the subject more deeply, at once admit that such control is desirable both for the societies and the exhibitors. It is true that it is a severe censure upon such societies, but, unfortunately, experience teaches that corporations of all kinds, whether for scientific or for charitable purposes, require periodically committees of enquiry and censorial visitations. "The Exhibitors' Society" may bring to the knowledge of the Councils of the Societies giving prizes, practices and conduct, information of which might never reach them if sustained only by individual remonstrance. Practices and conduct, perhaps, which, if persisted in, might complete that fall to which those practices and that conduct may have been advancing them. Let not the Councils of such Societies delude themselves, or allow themselves to be deluded, by such strengthless exclamations as—"Have we not a right to do what we like with our own?" For, in the first place, the income of the Societies is not

their own—is not the income of the Council—it is the income of the subscribers, and they, the Council, are bound to be sedulous that such income is disbursed in such a way as to promote the objects and carry out the intentions of the subscribers. “The Exhibitors’ Society” may give them some information on this point; and if they do, we confide in the Councils’ not allowing it to be pool-pooled aside.

On the part of the exhibitors, let us observe that it is unjust as well as offensive to say—“You need not exhibit if you do not approve of our conditions and prizes.” It is unjust, because we all know that to obtain prizes at such exhibitions, if those prizes are fairly awarded, justly raises in the public estimation the skill of the winners. Such prizes, therefore, should be so proportioned and so awarded, that no one shall be deterred from contending for those prizes either by their disproportioned amount, or by there being fair grounds to fear that the awards may be not correct.

We have much more to say upon this subject, and may recur to it, because we would offer every suggestion that we can to recover Societies which should set an example in all that is useful and correct in horticulture from that decay of finances and of character under which they are at present suffering.

WE have received the Prize List of the *Derbyshire and Midland Counties Poultry Society*, whose Exhibition is to take place at Derby on the 17th and 18th of November next.

Shanghaes are arranged in one class, sub-divided into different sections for the various colours. There are advantages, no doubt, in this deviation from the usual system, since the different varieties of each breed are placed in sections under a single class. But, though abstractedly there may thus be an appearance of simplicity, we question whether the number of the section which must be added to that of the class will not more than counterbalance the benefit from the mere reduction of the number of classes.

Each section, however, has but one class for *chickens*; thus juvenile *Shanghaes* of all descriptions must compete together, and so on with the *Dorkings*, *Game*, *Polands*, and *Hamburghs*. Now, there are grave difficulties to be encountered by the umpires when the candidates for honours are thus thrown together, and usually, also, more than ordinary dissatisfaction on the part of those owners whose birds are unsuccessful; and all this occurs from the absence of the general standard for merits and excellence, which is always at hand when fowls of the same variety only are brought into competition.

The classification of *Game* fowls is good; in this neighbourhood, indeed, some of the best specimens of the family might be looked for. In *Polands* we should have suggested an extra class “for any other variety,” as this might have afforded admission to the *Yellow-spangled*, the *Cuckoo*, the *White*, and the *Black* birds of this breed. These, with some other less-known

varieties, have had great attention paid to them for the last two or three years, and appear in every way likely to repay the care that has been bestowed upon them.

Pigeons are excluded; and, doubtless, they are a somewhat troublesome class to both managers and judges; but we regret their absence, as detracting from the interest taken in these exhibitions by so many of their owners, who possess poultry of no other kind by which they may attain the honours of the prize list.

Knowing the many expenses and difficulties of various kinds that ever attend the foundation of these Societies, the present prize list must certainly be accounted liberal; the rules, too, wisely include some of those alterations that have become necessary during the past year; and our anticipations, therefore, of the success of the undertaking must be sanguine; and sincerely, also, do we trust that its promoters may ultimately experience a full recompence for their present labours.—W.

THE Gold Medal, offered at the *West Kent Poultry Exhibition*, for the best brood of six or more Chickens hatched since Christmas, 1852, has been awarded to Mr. Thomas Rider, of Boughton Place, Kent. We also see it is stated in the “*Western Luminary*,” that Mr. Channing’s, of Heavitree, *Shanghae Cock* was not awarded the Medal solely on account of the absence of one of the points of his comb. This point of the comb he lost accidentally when a chicken.

GLEANINGS.

THE following is extracted from a very excellent American periodical, entitled *The Western Horticultural Review* :—

“CIRCLE OF DEPENDENCIES.—In answer to an inquiry by R. L. Pell, before the New York Farmer’s Club, as to the restoration to the land of its fertility which is washed away by rivers, Professor Mapes said: That the fertile portions of the continents are ever being carried to the ocean; nor is this confined to the soluble portions of the inorganic substances only, for soluble portions of the organic parts of both vegetable and animal substances are carried from continents by our large rivers and conducted to the sea, and if no means were provided for their return to the dry land, the earth would long since have been drained of its fertile portions.

“The deltas of the Nile, of the Mississippi, and of many other rivers, show conclusively the immense amount that is daily carried in mechanical suspension in their waters, the heavier portions of which alone subside to form these deltas. The woodland estate below New Orleans, belonging to Mr. Johnson, of New York, was a few years since covered with water of sufficient depth to float the larger class of vessels. In addition to these deposits, the under-currents of these rivers are so imbued with these organic substances in mechanical suspension, as well as with the more soluble portions of the inorganic constituents of soil, that any substance falling into the river at or near New Orleans with sufficient force to enter this current, will never again rise, and the quantity thus propelled into the ocean each day, is one 365th part of the decay of vegetation, over a surface of millions of acres, added to which are the falling banks of rivers, bars removed by change of channel, animal excreta, &c. That passing into the Gulf of Mexico, is subject to gradual dilution, separating by difference in specific gravity and various modifications of decay, these ultimates

forming food for fish of different latitudes, and causing those fishing localities so well known on the coasts.

"The cod are fed on the banks of Newfoundland, while the shad fatten south, and then travel to deposit their spawn where the greater dilution of food is more appropriate for the use of their young. Large portions of these materials, washed from the continents, go to feed the Algae, which, unlike many of the land plants, feed all over their surfaces, the principal office of their roots being to detain them in one particular spot, while their specific gravity being less than that of the surrounding water, causes them to maintain their upright position. When ripe, these Algae undergo decay, and either in their perfect or organised forms furnish food for fishes, crustacea, and sea-animals. Many of the vegetable products of the ocean are used as food for birds, while others, in obedience to nature's laws assume the kind of organism we notice, thus forming food for men and birds. Many of these birds are themselves food for man, while others deposit their excreta on the Guano Islands, and eventually contribute by the decay of their bodies to increase the bulk of these manurial deposits.

"The large amount of Algae and sea-grasses washed on the eastern shores of continents is another source for the restoration to the land of its constituents from the sea. The uprisings noted by geologists often present us with immense deposits of shells; and the greensand marls of New Jersey are filled with shark's teeth and other oceanic remains. The consumption of shell-fish is a prolific source of restoration from the ocean. The large consumption of fish, the amount of oil procured in the whale fisheries, seal fisheries, etc., all tend to restore in large quantities these proximates, albumen and gelatine, large quantities of carbon, phosphates, and all other constituents, which once or oftener occupied the land in other forms.

"The burning of kelp, the making of muriatic acid and soda from sea-water, and various other chemical manufactures of which the products of the ocean form a part, are an active and immense means of restoration. The removal of the Guano Islands to the continents are now restoring the aggregations collected during a more sparse population of the earth, for the use of an increased and more busy throng. The nitrogenous portion of all matters carried to the oceans as it assumes a gaseous form from decomposition, enters nature's great storehouse, the atmosphere, and while being blown across the continents, this ammonia is brought down by rains and dews, and is received and retained by the carbon and alumina of the soil, until nature in her economy shall again solidify and appropriate this *muscle-making* constituent."

POTATO MURRAIN.—At a meeting of the *Chemico-Agricultural Society of Ulster*, a few weeks since, a much fuller statement of Professor Bollman's views relative to the prevention of this disease was made than has previously appeared in our English journals.

"Dr. Hodges directed the attention of the meeting to the following communications:—

"Office of Committee of Privy Council for Trade,
Whitehall, May 20, 1853.

"Sir,—I am directed by the Lords of the Committee of Privy Council for Trade to transmit to you, for the information of the Chemico-Agricultural Society, Belfast, the enclosed copy of a work, by Professor Bollman, on the potato disease, forwarded to the Earl of Clarendon by Her Majesty's minister at St. Petersburg.

"I am, Sir, your obedient servant,

"J. EMERSON TENNANT.

"The Secretary of the Chemico-Agricultural Society."

"Dr. Hodges said that a gentleman present (Mr. R. McCrea), an agricultural student, had translated a portion of Professor Bollman's pamphlet, and made an abstract of the views contained in it. Mr. Bollman's method of protecting the potato from the 'disease' consists in drying the potatoes in a kiln or stove previous to planting. M. Bollman has grown potatoes by this method, during the years 1850-51-52, with perfect success. Another person, named Losovsky, had practised this method with great success,

unknown to M. Bollman, since 1847. Both these persons discovered the method by accident. Losovsky brought a potato home in his pocket in harvest, and laid it by accident near a stove, where it remained until spring. Curiosity induced him to plant it; it grew well and the produce did not show any trace of disease. He treated others in the same way in the next season, and has continued to do so since. M. Bollman, in his treatise, says—"With regard to the physiological causes of this phenomenon, I agree with Mr. Schleider in concluding that, in the drying of the potato, a part of the starch is set free; the young plants, profiting by this food produced in the nick of time, are strengthened during a moist and warm season, and when they attain their growth, produce a good harvest." In the German journal, *Dorfzeitung*, September, 1852, page 331, a person writes the following:—"Being assured, by many carefully-conducted experiments, that the principle of the disease did not lie in the atmosphere, nor depend on any external influence—such as mildew, insects, &c., I tried to operate on the plant, immediately that it begins to grow. The following is the method which appears to me the best:—A month before planting, I spread the potatoes (picked for the purpose) over a wide surface. I make beds one foot deep, and seven vershoks in circumference, on a piece of clay land, dry, and sufficiently elevated. I leave them there till the time of planting, turning them occasionally (that the air may reach them all), and rejecting any that appear tainted; and when the weather is cold I cover the beds with straw. At the end of a month I plant these potatoes, slightly dried, in a field, where they grow particularly well, and give an abundant harvest, without any trace of disease. The utility of this simple method is proved by five years' experience." M. Bollman, in remarking on this method, thinks it strange that they should have to reject those *which appear tainted*, having previously employed the necessary means for protecting them from disease. "The potatoes should be dried quickly, because then the skin soon becomes hard and the moisture is retained, which contributes to their development. They should be dried immediately after the harvest for two reasons:—1. The potatoes, when harvested, contain the germ of the disease; this increases more or less through the winter, and the drying, however, destroys it. 2. It is found that, during winter, a part of the starch is lost—this does not happen when they are quickly dried. In spring they should be planted as early as possible." Here follow experiments:—Mr. Wasilifsky (a distinguished agriculturist) dries the potatoes intended for planting in a smoking-house (where hams are dried). He raises them on a wooden frame made for the purpose: these grow better, and, after harvest, are but slightly tainted, while those not dried are very much diseased. Decandolle considers the potato disease to be a consequence of its artificial cultivation, and attributes it to an excess of starch. This is not the fact; it being proved, by experiment, that potatoes grown on a fertile soil contain less starch than those from a sandy and comparatively barren soil, and, probably, than those growing naturally in America. It is not owing to the excess of starch but to the excess of moisture, and hence the benefit arising from drying—(potatoes contain three-fourths of their weight of water). The drying destroys much of the watery part, without altering the constituents, as starch, fibrin, and albumen, and, for this reason, counteracts the disease in the early stage of its growth, without any risk to the abundance of the harvest. The circumstances which I have found to contribute to the formation of buds are—a warm temperature, moisture, darkness, presence of carbonic acid, change (variety) of temperature, and long-continued drying. The way of drying them:—Expose the potatoes soon after harvest to a temperature of 45° to 50° R. (133° to 144° F.), keeping them at this temperature for four days, avoiding, as much as possible, all *exhalation*, so that the external part may be dried and not cooked. After this, keep them in a dry place, where the temperature is not less than 3° R. (39° F.), till the time for planting. You may prepare the potatoes in spring before the time of planting. The potato may be carbonized without losing the productive faculty, if the burning do not extend below the skin. By carbonization the starch is changed into gum, another part into dextrine, a small part of the last forms sugar, but these changes do not at all hinder the future growth of the plant. To dry

the potato gently the following may be adopted:—They are put into a dry, well-lighted chamber, in which no persons live, or animals are kept, and the temperature kept for two months at 30° R. (100° F.), and afterwards gradually lessened to 3° R. (39° F.). Another method proposed by M. Bollman (but which he has not yet tried) is to keep the potatoes over till the second spring, drying them gently that they may keep better. Some persons suppose that the disease is caused by cryptogamia attached to the potatoes. If we adopt this opinion we must conclude that the organisation of these parasites is weaker than that of the plant nourishing them, and that they are more easily destroyed, and the high temperature may destroy these organisms which contain the germ of the disease. If we adopt the opinion that the disease is analogous to gangrene in animals, we shall see that it is of two kinds, one dry, which is local and more dangerous; the other, moist and spread over the whole system. Some suppose that since the epidemic of the potato has appeared, every harvest contains the germ of the moist gangrene; but this moist gangrene is changed, by drying, into a species which, at so elevated a temperature, entirely loses its contagious character. Lastly, if the disease be an epidemic putrefaction readily propagated in the new harvest, then it may be similar to the contagious diseases of animals and man which are propagated by a putrid element. This organic matter is destroyed by the degree of heat which is applied. Ho refers to the beneficial action of heat in the case of syphilis, as remarked by Dr. Rosenberger. Dr. Rosenberger thinks that all animal epidemics are destroyed by heat. M. Bollman mentions a person, named Kovalevsky, who bought some potatoes that had been kept in a dwelling house; the crops which he grew from them had no disease. The owner ascribed the benefit to the small size of the potatoes, but afterwards found it to be owing to the drying. M. Bollman concludes his treatise by observing that a slight drying may be useful, but only in certain localities and under favourable circumstances, but that drying at a high temperature is the method always adopted for counteracting the disease, everywhere and under any circumstances. Directions and Experiments.—1. Take in harvest two bushels of potatoes, the one as they are, and the other picked of such as are spoiled, and dry each separately in a stove or bath, until the skin of the potatoes is sufficiently hardened: keep them separately in a dry cellar till Spring. 2. Take two other bushels, one of sound potatoes, the other tainted, and expose them in a warm apartment on plates, the heaps to be 5 verschols (16 verschols—2.33 English feet) thick, and leave them till the time of planting. 3. A week before planting, dry in kiln (?) or bath two other bushels—one sound, the other diseased. 4. In Spring (the sooner the better) plant, in several pots, half-a-bushel of each class from the different processes of drying, and plant the rest alternately with undried potatoes. 5. Lastly, observe the growth, produce, quality, and taste of each compartment with the potatoes springing from the undried seed.

The Chairman (J. Andrews, Esq.), stated that the microscopic illustrations which Dr. Hodges had afforded them, some time ago, of the condition of the diseased potato, had strengthened his conviction that the disease must be ascribed to a fungus. He gave a curious and exceedingly interesting history of a potato which had been rolled up and protected from the air for the last fifteen or sixteen years. When liberated, sound potatoes were rare, and it was cut up and planted, and, for two years, produced healthy potatoes, free from all taint of disease. In the third year after its discovery he had obtained some of the seed derived from it; but the produce was attacked by the disease. The cuts of the discovered potato were planted in a frame, and the kind was found to be a variety of the apple potato, which has now disappeared, known as "Munster Maids."—*Irish Farmers' Gazette*.

COVENT GARDEN.

THE supply of home-grown Fruit becomes more varied as the season advances. Hitherto, *Strawberries* have been most abundant; but now there are, in addition,

Cherries, *Gooseberries*, *Currants*, and even *Apples*. *Strawberries* are exceedingly abundant, and very fine in quality. They are chiefly *Keen's Seedling*, *British Queen*, and a few of the *Elton*. The prime qualities make 9d. to 1s. per punnet, or 6d. to 9d. per pottle. The varieties of *Cherries* which are now in, are *Black Tartarian*, a delicious cherry; *Mayduke*, and *Bigarreau*. There are also a few foreign, of a variety called *Montmorency*, which is somewhat similar to our Kentish, and used only for baking. The *Maydukes* make 9d. to 1s. per lb. There is also another sort in at this time called *Adams' Crown*, a small pale-coloured variety, belonging to the *Bigarreau* family, and rather extensively cultivated in the Kentish orchards for its earliness. The *Apples* are small, half-grown, and unripe *Carlisle Codlins*, more for curiosity than use, and which will, in all probability, be purchased by somebody who likes to "say" they have eaten an apple-pie, when the more plebeian part of the community can only fancy what it is like. Of course, if such people will buy a whistle they have a perfect right to blow it. The *Grapes* are remarkably fine; large bunches, large berries, and beautifully coloured. *Black Hambro'* and *White Muscat* are the principal; they make from 5s. to 10s. per lb. *Melons*, also, are very plentiful and fine; they make from 2s. to 3s. each. *Peaches* consist of *Grosse Mignonne*, *Royal George*, *Bellegarde*, and *Noblesse*. The *Nectarines* are *Etruge*, *Hative*, and *Murray*, all of which are large and well-grown; they make from 1s. 6d. to 2s. per dozen: there have also been a few *Red Masculine Apricots*, but only a few. *Red* and *White Currants* have made their appearance, and make from 3s. to 3s. 6d. per half-sieve. VEGETABLES, of all kinds, are very plentiful. *Cabbages* make from 6d. to 1s. per dozen. *Cauliflowers*, 2s. to 2s. 6d. per dozen. *Peas*, 2s. per bushel. The peas which are first in the market are from the neighbourhood of Higham and Dartford, in Kent. They are the variety called *Early Kents*, a single-blossomed variety, which is valued for its earliness. *Rhubarb* is out, or nearly so. *Asparagus* may still be had in small quantities. *Lettuces* are remarkably fine, large, close-hearted, and crisp. The best sort is the *Paris White Cos*, of which, however, there are numerous different qualities. The finest which we have seen is that supplied by Messrs. Beek, Henderson, and Co., seedsmen, in the Adelphi, and it bears as great superiority over the old varieties as the old do over the lettuce in its wild state. These fine lettuces make from 6d. to 9d., and 1s. per score. *Potatoes* continue as in our last reports.

H.

PERPETUAL ROSES.

AMONG the numerous complaints made by the sons of the spade, how frequently do we hear of Rose failures. In one case, of the buds becoming "green-eyed monsters;" in a second, of the leaf threatening premature decay in the blossoms, with a debilitated constitution; in others, of a weak growth, which all the appliances of guano or other waters cannot fairly remedy. It is my purpose here to endeavour to show how these evils may be re-

medied, and what plans should be adopted to secure as much as possible the perpetual character.

By "perpetual," I do not here mean the class of Roses known by that name alone. I include all that have a tendency, under fortunate circumstances, to continue blossoming through the summer and autumn, whether Bourbons, Teas, Perpetuals, or any others.

When we come to look closely into this subject, it will appear astonishing how much blossom some kinds of Roses will sustain; we wonder how such a slender, wiry root, of so little volume, can cater for such a wondrous mass of flowers. We naturally admire the profusion of Wild Roses that grow around some old clay-pit, tangling in endless festoons among the boughs of alders, or other brushwood; but fancy such bushes equally laden with such blossoms as are produced by *Malmaison*, *Barrone Prevost*, or *Blairii*, No. 2! But there are limits to this fecundity; it is scarcely possible that such enormous blossoms could be produced in such quantities. Taking mere weight to represent quality, doubtless many a tree Rose in our gardens would furnish produce by far heavier in the aggregate than the largest of our Dog Roses in a wild state; and that, too, within the compass of a sprucely pruned little standard.

Roses "wear out," as it is termed; that is to say, even the Wild, or Dog Rose, under ordinary circumstances, has a constant tendency to the reproduction of suckers; these, in a short period, assisting in completing that destiny to the older branches which assuredly awaits themselves in due course. Still, if our friends who live in districts celebrated for Wild Roses will carefully examine into their habits, they will occasionally find that some escape this destiny and become almost trees. We have plenty close to where I write that have attained a height of from ten to twenty feet, with stems nearly as thick as my wrist, and which must be nearly a score years old.

Now, whatever be the causes of this durability, it is plain that the question of durability in our cultivated kinds is identified in a high degree with it. In order to appreciate this enquiry, it is only necessary for our readers, who feel interested in the subject, to take an hour's ramble purposely; and if I may be allowed the honourable post of guide in the matter, I shall select two localities to illustrate my subject; the one, the margin of a pit, hole, or other excavation, in a district noted for a deep and rich loam; the other, the common hedge-row, in a burning or sandy district; the former a low level, with, perhaps, a pond of water; the latter a dry elevation. In the first case, we may find gigantic specimens rambling, as before observed, some twenty feet, and bearing every stamp of luxuriant durability in producing suckers annually of a dozen feet in length. In the sandy hedge bank, we find a race of stunted bushes, the wood of which is discoloured, and carries wearing-out symptoms before it is half-a-dozen years of age. But the latter will be found to bloom more profusely, or will rather produce a greater body of blossom at one period than the pit Roses, which, on examination, will be found to approach a stage nearer to the perpetual character. In the pit case, we have a more powerful absorption by the root, through a more generous and abiding soil, with a much less amount of perspiration from the foliage; whilst, on the sandy soil, the vigour is far behind as to root power; and a free exposure to sunshine causes the plants to expend the chief of their powers in the production of blossoms.

I think that there can be little doubt that the foliage of the Rose possesses high absorbent qualities, for I have ever found them of a more vigorous character where much atmospheric moisture prevailed. Be that as it may, we may be well assured, that where a somewhat dry air prevails, and the object is to produce a

liberal amount of blossom, with as much of the perpetual character as possible, some equivalent must be provided in order to meet such excessive demands. That equivalent must be sought in the use of not only rich, but enduring, soils. I have tried Roses on the common Dog Rose stock on sandy soils, and on those approaching the clayey, or in sound loams; but the latter have ever been more satisfactory. One of my chief aims in thus arguing the matter, is to endeavour to persuade those who wish to excel in Roses to take proper pains of the proper kind previous to planting. In this respect, I have known much labour and valuable material misapplied, or wasted. Although I am as strenuous an advocate as most for an abundant application of manure to the Rose in general, yet I must declare, from experience, that not those who have used the most manurial matter have excelled, but rather those who, in taking a broader view of the question, bear also in mind the propriety of studying durability in the compost; in other words, the securing a texture of soil, not only beyond the drying of a week's hot weather, but of the whole season.

I am quite aware, that in soils naturally pretty good in character, little more is requisite to produce fine Roses for a year or two than to use a very liberal amount of rotten manure; and, indeed, who shall despise such liberal treatment? Still, I would fain have those who plant standard Roses in situations considered permanent, such, for instance, as the sides of a promenade, to take extra pains, and if the labour appear greater at first, such will be amply repaid in the end, not only by the greater and more continuous success, but in the economics of the affair. There will be less depredations from insects, less disease, and less necessity for tampering with liquid-manures. Not that I by any means condemn the use of the latter, but that I would so establish my Roses at the first, as that they would be in a position to endure extremes of weather, and that I, too, might be in a position to take my nightly slumbers, undisturbed by visions of Roses covered with fading leaves and aphides.

I have omitted all ideas of pruning purposely, but of that I shall say more by-and-by. I must confine myself to root matters in this paper. And now let me suggest a compost, such as I have found peculiarly adapted to standard Roses on the Dog Rose stock. Possibly some of our readers cannot avail themselves of such, and others, perhaps, will think it involves a good deal of trouble;—the former I pity; the latter I blush for.

Strong loamy turf from old clayey pastures forms one-half, but this is obtained nearly two years before used. The material I have found best, possesses a thick, coarse sward, and is stacked or ridged until the sward is fairly decayed—say nine months. It is then chopped to pieces with a sharp spade, when dry, and in that state is mixed into a compost with manurial and vegetable matters, composed of cow manure and old horse droppings; both the latter, being of some age, have lost their original appearance, and look like good ordinary rotten manure. To this is added sharp sand and some burnt ashes, and the whole is stirred and turned until perfectly mixed together. A heap like this should be made annually, by ambitious Rose-growers, and my practice is to thatch it with ordinary turf, in order to throw off the rains, and to preserve all its qualities for a length of time. I do not, however, rely on this mixture alone; depth of soil is, I find, a most important point, and no wonder either.

Now, the difference between this compost and one composed of some ordinary garden soil, or sandy loam, with manurial matters, is this—my compost will supply every need during a three weeks' drought, even though the waterpot is at rest; the same cannot be said of the sandy soil. But depth is most im-

portant here, as in many things liable to be affected by droughts, which, in hot weather, not unfrequently penetrate some eight or ten inches in depth; in common parlance—the supplies are cut off. Of course, liquid-manures can be administered, and ought to be occasionally; but I have, in late years, met with so many cases in which such applications, even after a thorough recognition of their importance, are either forgotten or neglected, that I deem it of much more importance to endeavour to lay down self-acting plans, than to shew how, with every appliance and lots of labour, things may be carried to a high pitch.

In preparing holes for tree Roses, I advise an excavation of two feet square by thirty inches in depth. If the bottom be dry, no extra precautions will be needed; but if any ways damp, let half-a-score brick bats, or crocks, be thrown in the bottom; if wet, draining must be had recourse to. But bricks or not, I advise that one-third of the depth receive some chopped turf, of the same character as before described.

Turves cut in cubes of about three inches square are capital; and they should be moist when filled in. On and amongst these a little rotten manure may be strewn, and over this the tree with the compost, leaving the surface about four inches below the ground level. When this is complete, I advise three inches of half-rotten manure, rich in character; and this, if I could manage it, I would case over with cinder ashes, from which the dust had been ejected, or charcoal grit. Thus finished, liquid-manures, or, indeed, ordinary water, would percolate with the utmost freedom; no stagnation here—no puddling.

Thus much for my ideas on the constitution of the soil as a means to promote the production of Roses most of the year. In another paper I must try and advise about the management of the wood, both in a growing and in a rest condition; for, like the Peach, &c., it is not all a matter of winter pruning; finger-and-thumb-work is of eminent service with the Rose when in active growth.

R. ERRINGTON.

BRAZILIAN PLANTS.

At page 219 of the current volume, I promised to give the names of some of the finest plants in Brazil not yet introduced to this country, or, if introduced, that are but very little known. The second name of the *Rhopala* at that page, which brought the subject to my memory, is not spelled right: *Corcovadensis* is the right way—the name is after the locality where the plant grows wild, the Corcovado mountain, a few miles to the west of the town of Rio. It is from the Corcovado mountain that the town of Rio is supplied with water through an aqueduct, and some of the finest plants in all the Brazils might be seen in a morning's walk along the sides of this aqueduct, and up the slopes, to the summit of Corcovado, which is 2000 feet above the level of the sea; and here is the native place of our old *Cactus* (Epiphyllum) *truncatus*, our old *Bignonia argyrostigma*, and our newer *sanguinea*, and the now common *Dipladenia crassinoda*; but the *Rhopala Corcovadensis* grows, probably, at the bottom of the hill, as it is mentioned as early almost as the town of Rio was built. It is from the Journals of the late Mr. Gardiner, as published by the Horticultural Society, that I extract the following:—

1. *Stiflia chrysantha* (a name by Mikan, a German botanist).—"This is one of the most beautiful shrubs indigenous to Brazil. It is not uncommon by the aqueduct, about half way up the Corcovado. It is a shrub from eight to fourteen feet high, elegant in habit, and with dark green leaves, not unlike those of the orange. It belongs to the Composite order, and to the

Mutisiaceous division of it. The flowers are very large, and of a beautiful orange colour, which, when seen from a distance, gives the plant all the appearance of an orange-tree loaded with fruit. It seems to prefer a dry clayey-irony soil." An active correspondent in Rio de Janeiro might easily get seeds or young plants of this beauty transmitted to England, and they will now come from Rio in about the same length of time as my first voyage from London to Edinburgh took in one of the Leith "smacks."

2. *Metternichia Principis* (Prince Metternich—also named by Mikan.) "This is also a shrub, but smaller than the preceding, and grows in similar situations. It produces an abundance of pure white flowers, about two inches long, not unlike those of a *Datura*." I guess this beautiful plant will require the same treatment exactly as the *Solandras*, to which it is more like than to *Datura*.

3. *Simaba glandulifera* (the first name by Aublet, and the second by Gardiner himself).—"A shrub, with a simple stem (that is, not branched), from six to ten feet high, and a cluster of spreading, pinnated leaves from two to three feet long at the top, which gives it somewhat the appearance of a palm. Out of the centre of these leaves proceeds an immense panicle, sometimes three feet long, of yellow, highly odoriferous flowers." You have only to take a long branch of the *Kelreuteria paniculata*, in bloom, to catch the image of this fine plant in the mind. *Simaba* is one of the bitter Quassiards.

4. *Amphirox longifolia* (Sprengel).—"This is one of the many Violaceous shrubby plants which exist in Brazil. It is rather rare in the woods of the Corcovado, grows to the height of eight to twelve feet, and produces large panicles of pure white, violet-shaped, sweet-smelling flowers." Talk about our tree-violets after all this! A regular pyramid of pure white violets from the end of a shoot, carried in the hand on a fête day, would be enough to drive all the batchelors into matrimony, or into the very middle of the Thames.

5. *Diclidanthera laurifolia* (Martius).—"A large, climbing shrub, which diffuses its branches among those of the trees near which it grows. It belongs to the Order of Sapotads, produces abundance of small, yellowish-coloured flowers, and a black, eatable fruit, of the size of a cherry." Here, then, is another stove climber to be added to the long list of such from Rio.

6. *Myrrhinium atropurpureum* (named by Schott).—"A Myrtlebloom shrub, from four to six feet high, not uncommon on the sandy shores of Rio. Its flowers, which are of a dark purple colour, are produced from the older branches, and are remarkable in the order to which they belong for their long exerted and definite stamens." Only think of a dark purple Myrtle flower, with the stamens of a *Galeandra*, alias *Inga*, of sorts! and all these to be had for the mere pleasure of a walk on either side, or beyond the town of Rio. Then, opposite the town, and on the east side of the bay, there are three varieties of the *Bouganvillea spectabilis* scrambling up the trees, and covering them all over, and making them as if on fire with their brilliant colours; one of these is the admiration of every one who sees it bloom so well in Paris; but here, in England, no one has ever yet won a single bloom from it; but let us have the three varieties homo from Rio, and surely one or other of them will flower with us.

Any writing out to a correspondent at Rio for any of these plants might, at the same time, ask for another fine plant which we know to be common in those parts, a kind of tree Lily, called *Vellozia*, by Martius; "the lovely *Vellozia candida*," as Gardiner calls it. This is the only species of the many *Vellozias* which inhabit Brazil that are found down on the coast; "the others, for the most part, inhabiting the mountains in

the interior;" also, Southern Guiana and the Mascaren Islands. Martius describes them as perennial Lilies, "with their trunks closely covered by the withered remains of leaves, branching by forks (dichotomous), and bearing at their points tufts of leaves in the manner of a *Yucca* or *Dracena*; some of them are from two to ten feet high, with a trunk sometimes as thick as a man's body." These *Vellozias*, with the *Barbacenias*, form a distinct section of Blood Roots (*Hæmodoraceæ*). *Vellozia candida* might easily be had within two miles of the town of Rio; it grows on the steep sides of "a small promontory, called Morro-do-Flamingo, that juts into the bay about two miles south of Rio." The flowers of *Vellozia candida* are not unlike our white Lily (*Lilium candidum*); plants of it have been raised from seeds, both in Dublin and in Glasgow; but surely some of the old plants on this promontory might be taken up and sent over to England without any very great risk; at any rate, there it is next to our door, where our vessels pass and repass every month in the year. Ten years ago it was thought next to impossible to introduce, or even cultivate, the great Indian Lily (*Lilium Giganteum*), but now Mr. Veitch has it up to the mark as easily as any of the other Lilies; and so it will be some day or other with these extremely curious tree Lilies from Brazil. It is only a question of time and perseverance.

Again, Mr. Gardiner highly recommends the following plants from the Organ Mountains, where they grow at such an elevation as to entitle them to be considered greenhouse plants, if even not more hardy. There is really very little difficulty in reaching the Organs from Rio; they are only about sixty miles to the north of it, and one-third of the distance is by water up the bay, and this is a common high-way every day in the year to bring down the country produce to the market at Rio.

Mr. March, an English gentleman, of whom all who reach him speak in the highest terms, has a large farm up half-way the Organ Mountains, whence he sends fruit and vegetables, and, probably, butter and eggs, every week to Rio; at this farm, the thermometer falls to the freezing point, and never rises higher than it does in England. Then, when we consider that all the following plants inhabit a zone of from two to three thousand feet higher than the farm-house of Mr. March, we need not fear much about the half-hardiness of these plants, or about any very great difficulty in getting them down to the farm, and hence to Rio, along with the cabbages and other vegetables, in market-carts and boats, and once at Rio, they ought to be as safe as if they were at Liverpool or Southampton.

1 and 2. *Prepusa connata* and *Hookeriana*.—The genus is by Martius, and the two species were named by Gardiner himself, and he sent them both alive to England, but they did not get over the fatigue of the journey, and they both died. "They are both beautiful plants, belonging to the natural order of Gentians. They will only succeed in the greenhouse in a peaty soil, kept moist, but at the same time well-drained." *Prepusa Hookeriana* is figured in the "Botanical Magazine;" it is an herbaceous plant of the first water, and *connata* is "a magnificent, somewhat-shrubby plant."

3. *Salvia Benthamiana*.—A very handsome, scarlet-flowered species: "a fine shrub, about three feet high."

4. *Salvia rivularis*.—"Somewhat shrubby, and about four feet high. Flowers large and scarlet."

5. *Escalonia Organensis*.—"A very handsome shrub, about four feet high, producing dense panicles of rose-coloured flowers."

6. *Boumannia verbasifolia*.—"A fine herbaceous plant, about four feet high, with a large, loose panicle of orange flowers, belonging to the *Mutisia* group of Composites."

7. *Lavoisiera imbricata*.—"This is one of the beautiful Melastomaceous shrubs, with small leaves and

large flowers, which are so common in the gold and diamond districts of Brazil; it grows in a moist, peaty soil." And

8. *Siphocampylus duploserratus*.—"A fine, subscandent species, with large flowers."

The following plants are less hardy than the above, growing lower down:—

9. *Napostanthus Braziliensis*.—"A fine, little, suffrutescent plant, belonging to the Cyrtandrous division of Gesnerads. In appearance, it is not unlike a *Streptocarpus*."

10. *Citrosma obovata*.—"A small shrub, worthy of being introduced, not only as a botanical curiosity, but for the rich lemon odour of all its parts."

11. *Talauma fragrantissima*.—"A fine large tree, belonging to the Natural Order of Magnoliads. The flowers are large, pale yellow, and powerfully odiferous. A single tree may be discovered by the sense of smell alone at a distance of more than half a mile, when the wind blows in a direction from it." It is one of the most striking trees Mr. Gardiner ever met with. It grows naturally in moist, swampy places, and not unfrequently flowers when not more than ten or twelve feet high.

12. *Passiflora speciosa*.—"A climber, with large scarlet flowers from four to six inches in diameter." This last, of itself, would pay for a journey from London to the very spot where it grows, taking it as a market speculation; and there are hundreds of clever young gardeners here who would jump at an offer of a run to Rio de Janeiro, remain there at head-quarters for nine or twelve months, and scour the country for miles along the coast, on both sides of the bay, and up through the whole of the Organ Mountains; and there are just as many half-hardy *Pleromas* on that same range, as would pay for the whole journey, plants, seeds, and all back to London, to say nothing of *Bignoniads*, the finest climbers on the face of the earth, purple and violet-flowered *Alamandus*, with *Ferns*, *Cinchonads*, *Composites*, *Myrtle-blooms*, *Orchids*, and a thousand besides, and all of the most beautiful descriptions; but it is of no use to run across the country once or so for them as if the whole camp at Chobham was running after you. Nothing but a year's rambling is worth speaking of; and I would invest a few hundreds in the speculation sooner even than in shares in the Crystal Palace itself.

D. BEATON.

ORNAMENTING ECONOMICALLY A NEGLECTED GREENHOUSE.

(Continued from page 222.)

CAMPANULA PYRAMIDALIS.—Those who have a taste for the beautiful can scarcely visit any of our great Flower Shows without being alike gratified and bettered. The authoress of the "Wide, Wide World," spoke both eloquently and truly when she makes her hero say, "a bunch of flowers seems to bring me very near the Hand that made them. They are the work of His fingers, and I cannot consider them without being joyfully assured of the glory and the loveliness of their Creator. It is written as plainly to me in their delicate painting, and sweet breath, and curious structure, as in the very pages of the Bible," &c. I have heard expressions similar to these breathed by many as they looked at and admired that noble novelty, the *Lilium giganteum*. There is certainly something very striking in its appearance, sending up a strong, tall, conical stem, with its large flowers coming out near the extremity of the pointed cone, bloom there taking the place of foliage below; this very habit fitting it peculiarly for ornamenting greenhouses, more especially wherever it is

desirable to introduce standards—or bloom above and bloom below—as was lately adverted to by Mr. Beaton, when speaking of the pretty standards of *Deutsia gracilis*. And yet, with all our admiration of this splendid and singular Lily, and that was by no means small, I could not but feel that when the interest of novelty was gone, it could hardly bear comparison, as an object of beauty, with a well-grown plant of that old *Campanula* with which I have headed this article; but for the seeing of which in perfection now-a-days, we must in general quit the gardens of the wealthy, and seek for it, in all its glory, in the window of the mechanic or the cottager. Some time ago, I was taken up a back street to see a fine specimen; the stem was little less in thickness at the base than that of the gigantic Lily. It was a perfect cone of flowers, branched slightly at the base, and more than eight feet in height; so high, that it had to be taken from the window, and placed on a low stool a little behind it. It was growing in a ten-inch pot, and set in a large saucer, where about half an inch of water was then constantly kept, and when the sun shone upon it very strong a thin window-curtain was drawn before it to shade it. The owner had kept it for two years, receiving only a small bit at first, and potting it on as it required it. No merit was assumed by the owner; all the credit was very delicately given to the plant that *would grow so*. I confess the sight of that plant, and the Lily combined, pretty well confirmed me to take back that old Bellwort again as one of my especial favourites; and, that our small greenhouse and window friends may have an equal start, I will here detail a few of the points essential to its successful pot culture.

Some of my friends have spoken enthusiastically of specimens from ten to fourteen feet in height; but I suspect these must have been plants of several years standing. With the best part of two years' management, my general success rarely mounted higher than from six to eight feet; but even at that height, and well clothed to the base, whether they were the blue or the white varieties, they constituted objects that few things would rival, either in greenhouse, window, veranda, or entrance-hall. As they cannot be bloomed well under more than a twelve-month's care, and as, after blooming, the old plant is of no more use than for furnishing a new set of young ones, an answer is at once supplied to the query, why such fine old things seldom appear at exhibition tables? the exhibitors very wisely running with the stream, and adopting as their *protégés* those plants which, with the necessary routine of attention, will for a number of years be getting better and better every year, without subjecting them to the trouble of over and anon commencing their plants from a seed or a cutting.

As the time for sowing or making cuttings is now past; and as July will be here before this will see the light; and as the purchasing of a few plants will not hurt those the most economically disposed; and as tradesmen will soon let us know where they are to be found, if we raise a regular hue and cry for them; I would advise the securing a few nice young plants, either in pots, or raised carefully from the nursery-beds, so that, by careful attention, bloom may be obtained from them in spring and early summer.

Supposing, then, that you obtain a plant in a four or five-inch pot, or a plant which you put into such a sized pot, though the first would be the best, the first thing is to encourage growth with plenty of water, &c. By-and-by, by the end of the month, if the roots have reached the side of the pot, give another shift, using a pot three inches wider, if the plant is strong, and two inches wider if the plant is not so robust. It is bad policy to shift or pot after the middle or towards the end of August, because the autumn sun is wanted to mature the juices of the plant, and it will pass the

winter more easily with a pot well crammed with roots. After shifting, keep close for a few days, either by putting the plant in a cold pit or frame, or under a handlight. The latter utensil is very useful for all such purposes in a corner of the greenhouse, when no other structure is come-at-able. By the end of September, water must be discontinued by degrees, giving no more than will just keep the plant from flagging, and exposing it to as much sunlight as possible. By the end of October, the plant should be housed for the winter. It will do well plunged in a dryish cold pit, and, with the exception of air-giving in fine days to dispel damp, &c., and securing from severe frost, it will want no more attention until fresh leaves break round the crown, as the sun gains strength in March. If in a cool greenhouse, the plant will keep better if the pot containing it is plunged in another, and the space between filled with moss. In such a position, the plant must not get so dry as it may be permitted to be in a cold pit; but the second pot will prevent the necessity of much watering, and the less it will do with in winter the better it will thrive in the following season. As the fresh growth thus proceeds, water gently several times, until the whole ball is moistened with water at the temperature of from 65° to 70°. Then, if growth proceeds nicely, and your plant is in a six or seven-inch pot, make up your mind to give it a shift into one several inches wider. Give it a fair portion of drainage. When the ball is turned out of the pot, pick over the sides of the ball gently with a fine pointed stick, so that the fibres may run at once into the rough, rich, sandy loam. Equal portions of old dung, and rough loam, a year old, and then one portion more of sand, charcoal, and lime rubbish, will grow this plant admirably; but it does well in such soils as is got by the highway in loamy districts, mixed with a little sand, and then muled with rotten dung. After potting, keep the plant close for a few days, and with limited air, until the flower-stem is showing itself. Water carefully, and rather in a niggardly way, until the roots are taking hold of the new soil, then give liberally, and, if alternately with various kinds of manure-water, not strong, all the better. If, while the stem is rising for the first foot or so, the plant is kept slightly shaded from bright sun, and with not too much air, the stem will rise more rapidly; but this must not be carried to excess; for if air and light are long withheld you will have length of stem at the expense of compactness and robustness. The plant now becomes a regular toper, and, in a sunny day, drinks amazingly. To avoid any sudden extreme, place the plant in a saucer, and let it thus so far be treated as a half-aquatic. The water, however, should not stand high up in the saucer. When in full bloom, it will be preserved longer under a slight shade; but the least extreme will cause the blue variety to lose its rich, glossy colour. When done flowering, you may let the plant ripen its seed, or cut it down and set it aside, for the sake of dividing its roots, which may be done any time in summer, but best of all in the spring.

Having thus described the culture necessary to be followed with a young plant, I will now state shortly how these young plants are to be obtained by those who would raise and manage them from first to last for themselves; and

First: From Seed.—If you can command a slight hotbed, or a place in a cucumber box, sow in light sandy soil early in March. If you must depend on a greenhouse, sow there under a bell-glass at the end of the month. The seed is very small, and must be very slightly covered. After being watered, the bell-glass, especially if shaded, will help to keep it so. As soon as they are fairly up a little air must be given, or they will damp off. When they have got three or four small leaves, prick them off separately, a couple

of inches apart; and then, when they begin to meet, pot them separately in small pots, and repot as they require it. If kept in pots, that summer and the following one will be chiefly spent in preparation and growing; but then, in the third, you may expect splendid blooming plants. But if planted out in a warm border, five or six inches apart, when taken from the pans in which they were first pricked out, and then placed in rich light soil, and treated much as I mentioned for perpetual Carnations, a few of the strongest might be potted in the beginning of September, in the hope of their blooming the following season; and the rest could remain in the bed, protected from wet and severe frost in winter, and ready to be potted the following April or August, to be flowered in the succeeding summer.

Secondly: By Division of the Plant.—This is best done in spring. Many shoots may show themselves; all should be ribbed off, except the strongest, and as soon as that is rooting freely, let it be treated just as I first mentioned for the bought-in plant. This division is best done after the new growth is taking place from the plant cut down. If the young plants could receive a month's nursing in a slight hotbed they will thank you for it.

Thirdly: By Cutting up the fleshy Roots into pieces of about one inch in length.—These should be inserted in sandy loam, and placed in a hotbed in March, as thus much time is gained. Most of these will throw up shoots from what is termed adventitious buds. When fairly growing they must be hardened off, and potted, or pricked out, just as seedlings, or divisions; but they will be stronger than the first. To have a succession, therefore, presupposes a considerable amount of attention, and stamps the grower of a good plant as no careless, haphazard person. I have been too diffuse on this subject for many readers, but many still tell us that we take their knowledge too much for granted.

CAMPANULA NOBILIS.—This is a native of China, more spriggy and bushy than conical in its growth; much dwarfer than *pyramidalis*, but having large blueish-purple flowers, three inches in length, and half as much in diameter, and prettily spotted inside. This has been spoken of highly to us, but I have never grown it. I should say it would be easily cultivated by divisions, in spring, large pieces blooming the current year, and small pieces and cuttings of the root, as mentioned for *pyramidalis*, blooming in the following year.

CAMPANULA GRANDIS.—This is another that is less strong in growth than the *pyramidalis*, requires considerable care out-of-doors, but will always command attention when grown to one stem in a pot. Propagated and attended to as recommended for that species, even with less care, it will be sure to give satisfaction.

As companions to these, because flowering best when grown in a conical shape, let me introduce the large kinds of *Lobelia* for ornamenting a cool greenhouse in summer. I should hardly have said companions, it should have been successors, as the beauty of the Campanulas will be on the wane before that many of the flowers of the *Lobelia* will be thinking of opening. Many of these make fine ornaments for the flower-garden during the summer, and some, such as *fulgens*, have lived out-of-doors, in dry places, for several winters; but individual plants rarely possess such an interest out-of-doors as they do when grown and bloomed under glass. Thus treated, it is no uncommon thing to have *fulgens* with its main spike six feet high, and nearly a score of flowering shoots round it from the base—some half that height, and others much less. I will merely mention a few of the best for this pot growth.

Lobelia cardinalis, *fulgens*, *igneae*, *splendens*, are all rich scarlet; and *L. pyramidalis*, *speciosa*, and *syphilitica*, blues. The general treatment of these was lately given. Small plants of any of them obtained now will make

tidy little flowering plants by autumn, but need not have a large pot. Now is as good a time as any to get them. In the end of autumn, when done flowering, cut all the stems away, and plunge the pots anywhere, where you can keep the frost out, and keep the roots rather dry. Under the stage of the greenhouse will do as well as anywhere, if you do not soak them while enjoying their winter's rest. As the sun gains power in March, the suckers will begin to rise through the soil, and before they are one inch in length, you must bring them to the light, and water them gently with water at about 60°. By-and-by, before the shoots are above three inches in length, you must think of potting them separately in small pots, and in light rich soil, and then the position for them is a hotbed, with a bottom heat of from 70° to 80°, and a medium top heat of from 55° to 65°. In such a plunging medium, when large plants from these single suckers are wanted, the plants must be replaced, after their various shiftings, until the end of May, when they may have a saucer to stand in, in the warmest end of the greenhouse, and have more air given to them by degrees, until they are fully exposed to sun and all the air possible by the middle of June. The soil should be richer each time of potting, until at last a third may consist of old rotten cow dung, with plenty of sand. So treated, a 12-inch pot will bloom a fine specimen. Without the hotbed, the end of March will be time enough to shift them in the greenhouse; the plants, after being potted, should be kept there under a handlight, at least for the two or three first shiftings, and unless extra heat is maintained for vines on the roof, &c., a 6-inch or 8-inch pot will be large enough for a moderate specimen under these circumstances. These plants, kept over the winter, will afford a rich supply of plants the following spring. When growing and blooming give them a fair portion of manure-water and a saucer to stand in. In fact, most of them will bear the treatment of an aquatic in summer, and in winter too, if the roots were deep enough; but if saved above ground they must be kept rather dry.

SALVIAS.—I will just mention, for the present, *Salvia splendens*. Cuttings taken off now, inserted under a bell-glass, potted when struck, kept close, potted again into a five-inch pot, hardened off, and exposed to light and air in the first part of September, will bloom in a cool greenhouse in October, November, and part of December.

Salvia fulgens, treated in the same way, from being hardier, will bloom towards the new year.

Salvia Gesneriflora, so treated, fairly supplied with water, and an open airy place in the house in winter, will begin to open its scarlet blooms in the middle of February, and continue to do so for several months.

Salvia patens: the best mode to get nice flowering plants of this delightful blue flower, for summer and autumn, is to sow seeds in a cucumber box, or anywhere, so that there be a little heat in March. Prick off, and then pot.

Chinese Chrysanthemums. These are now cheap enough and splendid for an autumn display. It is too late to strike from cuttings; but if you have access to any large plants on stools, out-of-doors, you may lay the points of these shoots in small pots, giving the part inserted in the soil a slight twist, and you may have as many nice little, dwarf, flowering plants as you like; and then, if you want a dwarf mass of bloom, you can turn a half or a whole dozen of the little plants into one pot or vase.

R. FISL.

THE BOTANIC SOCIETY'S EXHIBITION IN REGENT'S PARK.

THE Royal Botanic Society have certainly been favoured this year with fine weather for all their three

exhibitions. Notwithstanding we have had lately bountiful showers of rain, the 29th was quite a fine day, and, being the last exhibition of the season, the company was quite as numerous as on former occasions. Like my friend, Mr. Beaton, at Chiswick, I was favoured with a privilege ticket, which gives a good opportunity of seeing the numerous objects exhibited quietly, and of studying them to great advantage. This privilege did more for me than for my friend, for it gave me the opportunity of seeing my gracious Sovereign the Queen, her Royal Husband, and their suite. Her Majesty looked remarkably well, and appeared highly to enjoy the sight of the beautiful flowers and fruits. It is well known the Royal family visit the exhibition before the ordinary visitors are admitted, and thus have a better opportunity of examining, without hurry or confusion, the various productions put upon the tables.

The exhibition was above the average. There were plenty of plants in good condition. The cut Roses were very fine indeed, and the fruit excellent.

NEW PLANTS were scarce. The very pretty *Philesia buxifolia*, which so pleased Mr. Beaton, at Chiswick, was here also, with seven or eight of its large crimson flowers upon it. Close beside it was a little pigmy plant of it, not more than four inches high, with one fine flower upon it. I was told it was brought to show how freely it blooms, even on the tiniest plants. Messrs. Veitch also exhibited a new hardy *Rhododendron*, named *Duc de Brabant*, with several large heads of flowers; ground colour pale flesh, with numerous spots of brownish-crimson; large size, and well formed. As this is quite hardy, and flowers so late, it is a good addition to this showy class of hardy evergreen flowering shrubs. The same firm sent a good new *Ixora*, named *Lobbii*, of a dwarf habit, with a large open cyme of orange-scarlet blossoms, very showy, and quite distinct from any other species. The nearest to it is *I. Griffithii*, but it is more dwarf than that fine species, and of brighter colour. The leaves are fully six inches long, and of a rich dark green. Messrs. Henderson had a neat specimen of *Stylidium seandens*, grown as a low bush; the flowers are produced in heads at the ends of the shoots, and are of a pleasing purplish-lilac colour. I think it the prettiest of its race. There was also a new species, or perhaps a variety only, of *Blandfordia*, a genus of showy greenhouse evergreen perennials, from New Holland. It had several spikes of bell-shaped flowers of a beautiful sulphur colour, and is certainly very elegant. It came from Mr. Hume, gardener to R. Hanbury, Esq., of The Poles, near Ware.

In the class, PLANTS OF ECONOMICAL INTEREST, there was the *Lagetta lintearia* (the Lace Bark Tree), from Jamaica; and also a plant of the species that produces the wholesome Arrow-root, *Maranta arundinacea*. These came from Sion House, Isleworth, and were very interesting.

NEW FLORISTS' FLOWERS were numerous, and some of first-rate quality. In *Pelargoniums*, there was one that obtained a medal of merit; it is named *Cloth of Gold*, and was raised by Mr. Foster. The lower petals glowing crimson; upper petals nearly black, with a clear margin of carmine; form excellent; truss large, and a free bloomer. *Lucy*: lower petal blush-rose; upper, dark blotch, edged with rose; large white eye; form and habit good. *King of Hanover*: remarkable for the lower petals being striped with crimson. *Nil desperandum*: a good variety in the way of *optimum*, but a shade or two lighter. *Conqueror*: dark scarlet, with maroon blotch; good form and habit. In *Fancy Pelargoniums* was *Cloth of Silver*. This is a great improvement upon the light varieties. The flowers are large; lower petals pure white, upper petals the same, with a distinct circle of rosy-lilac; form good; a beautiful,

good, and distinct variety. *Crystal Beauty*, one of the best-formed flowers of its class; colours well defined.

SEEDLING FUCHSIA, *Magnifica*, a large flower, well-reflexed; petals light scarlet; corolla bright purple; a noble flower.

VERBENA, *Elegantissima*.—This is quite a gem; colour a rich deep purple, well contrasted with a large, pure white eye. It must be an universal favourite.

PINKS.—New good varieties were *Cardinal*, ground pure white; dark heavy lacing; form excellent; full size. *Napoleon*, ground pure white; lacing nearly black; a good flower, but rather thin. *Purple Perfection*, ground white; lacing very broad, of a rich purple colour; form good.

There was also a seedling *Calceolaria* for bedding purposes, of good quality, and of a rich crimson colour, and yellow hood, very numerous bloomed;

Also, one named *Crimson King*, much deeper in colour than *Sultan*.

COLLECTIONS.—*Pelargoniums* were in excellent bloom; the dark weather, no doubt, having assisted greatly in keeping them so fresh. The following I noted as being good varieties, in addition to those noted on a former occasion:

DARK.—*Dobsonii* (very fine), *Diadem*, *Pacha*, *Marginala*, *Flying Dutchman*.

LIGHT.—*Electra*, *Exhibitor*, *Maid of Perth*, *Gany-mede*, *Elise*.

PURPLE.—*Lord Gough*.

ROSE.—*Ariadne*, *Enchantress*, *Vulcan*.

WHITE.—*Mount Blanc*. This colour needs improving; the *Virgin Queen* is as yet the best.

FANCY, or smaller varieties:

DARK.—*John Bull*, *Defiance*, *Hillmanum*, *Vandyke*, *Lady Alice Peel*.

LIGHT.—*Delicatum* (good), *Purity*, *Emma*.

ROSE.—*Alboni*, *Erubescens*, *Fairy Queen*, *Bellinzona*, *Barbette*, and *Perfection*.

FUCHSIAS.—There was only one collection exhibited, and it wanted variety, though the plants were well grown and finely bloomed; *Don Giovanni*, especially, a dark crimson flower, with purple corolla. The rest were light varieties, namely, *Speciosa*, *Princess Elizabeth*, *Madame Sontag*, and *Pearl of England*.

CUT FLOWERS.—In this department the *Roses* took the lead, and were both numerous and in fine condition; though I cannot think that mode of exhibiting this beautiful flower by any means so effective as in pots, growing, as it were, naturally out of the earth, and showing branches, leaves, and blossoms, in their greatest beauty; whereas, exhibited as cut flowers, three in a bunch, they look like a large collection of bouquets for sale. My ideas on this subject may be, perhaps, considered high treason; but I cannot help that. One advantage there certainly is in this mode of exhibiting the Rose—it enables the visitors to see a greater number of varieties, and thus gives an opportunity of noting the best. I picked out a goodly number different to any I noted previously, and I give their names, with the assurance, that, to the best of my judgment, they are all worth growing where there is space enough for them.

Dark Roses.—*Le Lion des Combats*, a new and rich dark crimson Rose, superior to the far-famed *Geant des Batailles*; *General Castellane*, *Triomphe de Jaussans*, *Triomphe de Paris*, *Paul Rieaut*, *Kean*, *Paul Joseph*, *Duke of Richmond*, new and fine; *Hippocrates*, *Boule de Nanteuil*, *Vivid*, *Sonchet*, *Deuil de Due d'Orleans*.

Deep Rose.—*General Brea*, *Marquis Boella*, *Jaques Lafitte*, *La Ville Bruxelles*, *Cule*, *Las Casas*, *Mrs. Elliott*, *La Syleure*, *Prince of Wales*, *Robin Hood*, *Comte Boubert*, *General Cavaignac*, *Coup d'Amour*, *Louis Buona-part*.

Light Rose.—*Caroline Sausal*, *Blairii*, *Anarella*, *Lady Hamilton*, *Amardino la Calusienne*, *Carolino Wahner*,

La Jeune Reine, Duchess de Montpensier, Climene, Charles Duval, Paul Perras, Reine des Fleurs.

White.—Comtesse Marimais (a moss), Madame Hardy, Comtesse de Laccpede, Princess Lamballe, Etoile de Malmaison, Madame Soëtman, Count Plater, Princess Clementine (globe, white hip).

Yellow.—Cloth of Gold (shown in great perfection), Narcisse, Solfaterre, Tea Queen Victoria.

PINKS.—The cut collections of this elegant flower were numerous, and in fine condition. I noted the following as being particularly good:—Reubens, Lord C. Wellesley, Sarah, Criterion, Beauty of Salt Hill, Ada, Hector, Perfection, Harry, Narborough Buck, Mrs. Maclean, Constan, Lord Valentia, Glory, Duke of Wellington, Hercules, Queen (very fine), President, Jenny Lind.

PANSIES.—There were several collections in good condition, but nothing new or different from those noted on former occasions.

CALEEOLARIAS.—There was only one collection, but they were exceedingly well grown and finely bloomed. It came from Mr. Constantine, gardener to C. Mills, Esq., of Hillingdon. Mr. Constantine has outstripped everybody this year in Calceolaria growing. He has taken the first prize at every show so far this season.

ORCHIDS.—Though not quite so numerous as at the last meeting, these singularly beautiful and deliciously-scented flowers were in splendid condition. The following were shown for the first time at these gardens this year:—*Aerides quinquevulnerum*, five spikes. *Aerides Schroderi*, new and fine. *A. larpentæ*, *A. virens*; *Galeandra Bauerii*, a fine plant, well bloomed. *Saccolabium Blumei major*, with very long spikes. *Phaius albus*, twenty spikes. The rare *Anguloa uniflora*, with pure white flowers, six blooms. *Cynoches ventricosa*. *Cynoches*, *sp.*, very rare, producing a very long, drooping spike, thickly clothed with curious flowers. *Odontoglossum hastatum*, many spikes. *Myanthus*, *sp.*, with dark flowers; the lip fringed with white hairs. *Epidendrum macrochilum*, many spikes. *Oncidium lanceanum*, with twelve spikes, a very fine plant. *Dendrobium moschatum*, seven spikes. *Vanda Roxburghii carulea*, a very dwarf variety. *Cymbidium pendulum*, very fine, eight spikes. *Miltonia spectabilis colorata* and several species of Stanhopea.

MISCELLANEOUS COLLECTIONS of Stove and Greenhouse Plants. Of these there were a goodly number, consisting mostly of the usual species. I observed the following as being seen for the first time this year:—*Gardenia Fortunii*, a large plant, 3 ft. by 2 ft., with numerous large white flowers. *Echites atropurpurea*; this rarely-seen plant was shown by Mr. Green, well grown, and finely-flowered. *Polygala cordifolia*, densely flowered, 2½ ft. by 2½ ft. *Kalosanthes miniata*, 2½ ft. by 2 ft. *K. coccinea*, 3 ft. by 2½ ft. *Ixora alba*, 3 ft. by 2½ ft. *Medinilla Sieboldii*, 2 ft. by 2 ft. *Clerodendron affine*, with many spikes of fine scarlet flowers. *Indigofera decora*, 2 ft. by 2 ft. *Roella ciliata*, 2½ ft. by 2½ ft. *Cyrtoceras reflexa*. *Gompholobium splendens*, a large bush covered with bright yellow blossoms. *Phenocoma prolifera*, 3 ft. by 2½ ft. *Sollya Drummondii*, with many blue flowers; *S. linearis*, both trained to globular trellises, and had a pretty effect. *Dracophyllum gracile*, with its pretty heads of pure white flowers. *Leschenaultia biloba superba*, with many deep blue flowers.

HEATHS were in better condition than usual. Every plant was well grown and covered with bloom. Generally speaking, they consisted of species I have already noted, except the following:—*Erica jasminiflora alba*, 3 ft. by 3 ft. *Tricolor elegans*, 2½ ft. by 2½ ft. *Aitoniana*, 2 ft. by 2 ft. *Halicocaba*, 2½ ft. by 2½ ft. *Jubata*, a rare species, 2 ft. by 2 ft. *Parmentiera rosea*, very beautiful, 3 ft. by 3 ft. *Savillea*, 2½ ft. by 2½ ft. *Inflata*, 2 ft. by 2 ft. *Perspicua rosea*, very distinct, 2 ft. by 2 ft., and *Ampullacea*. These are all very fine

Heaths, and worthy of every care and attention. Wherever there is convenience to grow Heaths the above ought to be in every collection.

MISCELLANEOUS.—Under this head was placed stove and hardy Ferns, Lycopodiums, Variegated Plants, and Alpine Plants. Of all these, there were collections in fine condition, very creditable to the parties who exhibited them.

FRUIT.—The exhibition of various kinds of fruit was greatly superior to the last, as the following summary will show:—There were forty-six *Pine Apples*, all very respectable, and perfectly ripe; the heaviest weighed 9 lb. 10 oz. Eleven baskets of *Black Grapes*, 12 lbs. in each, all ripe and well-coloured. Twenty-one dishes of *Black Grapes*, three bunches in each, many of them finer than I ever saw grapes before. Fourteen dishes of *White Grapes*, three bunches in each. Fifty-two *Melons*, all very fine. Fourteen dishes of *Peaches*; thirteen of *Nectarines*—these were particularly fine. Twenty-three dishes of *Strawberries*. Five dishes of *Cherries*; and two of *Figs*; besides three collections of various kinds of fruit. There was also a collection of Exotic fruits, consisting of fruit of *Gamboge*, *Allspice*, *Nutmeg*, *Vanilla*, and *Rose Apples* (*Engenia jambos*.) These came from Mr. Ivison, gardener to the Duke of Northumberland, Sion House, and attracted much attention. *Vines in Pots*, with several bunches on each; of these there were two collections.

T. APPELEY.

ON THE FORMATION AND KEEPING OF LAWNS.

WHEN we consider the extent of surface, and the large share a piece of well-kept turf contributes to the general appearance of the pleasure ground, it affords no surprise that its being kept in the best possible condition has been insisted on from time immemorial by all writers on horticultural subjects. As this good keeping is certainly more the result of labour than of skill, it may, at first sight, appear superfluous to make it the subject of a chapter in this publication; but as there are points in many cases open to improvements, and some erroneous opinions abroad respecting "well-kept turf," and but few instructions given regarding making it so, beyond that of "rolling and mowing," a few observations may not be out of place here.

I confess not to have been the most successful in every effort made to secure a good carpety lawn, but as unsuccessful measures are scarcely less instructive than those having a more fortunate issue, I have the less reluctance at reporting them.

It is no unusual thing for any one, on passing over their lawn, and stamping their foot on it, to exclaim against it looking bad, in spite of all the mowing that can be given to it, while that of a neighbour, only a short distance off, is as soft as a Turkey carpet, and as beautiful a green as can be wished for, either on taking a horizontal view of it, or the more close inspection of looking down upon it; each blade of grass seems green and fresh to the tip, and there appears but little there except grass, or such plants as are equally agreeable to look upon—as Yarrow, Clover, Trefoil, &c.; there being no plantain, and the period for daisies we suppose, to have, in a manner, gone by. Now, this view of the matter we shall suppose to have been taken at the present time, the middle of July; let us wait a while longer, and take another look, and then see what this piece of fine, well-kept turf looks like then; and, to complete our picture, we will suppose our visits of inspection to be repeated until the rains of October had set in, and supposing our friend's turf not to have had anything done to it for about a week or so. The first impression, on discovering it, is one of dislike and dis-

appointment. Innumerable worm-casts have given it the appearance of having received a top-dressing; sweeping off, will, of course, remove this nuisance; but it appears again in a day or two, and the evil is repeated; whereas, sweeping at such a time more or less dirties the grass, which it is then important to keep clean, and before it recovers itself again, the operation is very likely to be repeated. As this often happens with turf which in summer is perfection itself, it becomes a matter of consideration, whether its good appearance then is not purchased at too expensive a rate. Let us recall to memory the appearance that the lawn had last autumn, which we are complaining of as looking bad now, when we may remember the absence of worm-casts to any extent, and the green freshness it presented to the eye, scarce a blade but was green to the tip, until the setting in of severe weather gave it that brown cast which is equally fatal to the herbage elsewhere.

Perhaps our readers will be saying, why not neutralize the two, and obtain the benefits of both, as is done, or is attempted to be done, in so many things. This, we are aware of, is done both artificially and naturally, but in neither case does it approach the extremes above-named; besides which, in the formation of extensive tracts of lawn grass, the materials at command may be so limited as not to allow of all the best conceived ideas being carried out; for, coeval with the formation of a lawn, is very often that of the formation of flower-beds, shrubberies, stations for particular trees, &c., all of which are supposed to have a greater claim on the good soil at command than the turf; consequently, it is out of what remains that the new lawn, if it be such, has to be formed, and the operator is often glad if he only can obtain good sound pasture turf to lay it with, which he cannot at all times do, and is consequently obliged to make his surface out of such materials as he has, and depend on his seedsmen giving him such a mixture of grasses as he deems most suitable to form a bottom within the shortest possible time. Now this plan answers very well at times, and we have seen excellent lawns prepared in this way, when the season, and other things, conspire to their well doing; but this is not always the case; for besides the failures that often take place in the getting of grass seeds to grow, it does not always make a good sound bottom when it does succeed; however, when turf cannot be had, there seems no alternative but to adopt this plan, unless it happen there be a small quantity of turf at command, when, by pulling it (not cutting) into pieces about the size of a person's hand, or less, it can be scattered, or rather carefully placed over the smoothened surface of the ground a little way apart. This, when united, will form a tolerably good bottom, but seeds may be sown amongst it likewise. This is called *innoculating*; and when a piece of ground is wanted to be quickly turfed over, or rendered green, this is, perhaps, the most economic way of all, and if it be at a little distance from the observer it speedily assumes all the characters of good turf. A more than ordinary amount of rolling must, however, be given to it, for as the patches are all placed above the surface level, they require to be pressed into it in order to keep them on a level with the interstices; of course, it would be proper to have the turf that is used for such a purpose of as good a kind as possible, but this may, perhaps, be more easily attained when it is known that not more than one-tenth part of the surface to be covered is wanted by this plan, although a greater quantity may be planted over more advantageously, still it is not absolutely necessary. Now, after all this, the well-being of the turf is a matter more really due to the quality of the soil than anything else; yet some few points ought to be attended to, whatever kind of substance it is intended to be sown or planted on.

1st. The surface material, to at least the depth of six

inches or more, ought to be of a uniform quality, whether that be rich or poor, or any mixture between the two; a greater depth than six inches has often been insisted on, but this will do in most cases, except on slopes, of which we will say something hereafter.

2ndly. If seed has to be sown, choose a damp day for that purpose, and let it be immediately raked in, and as soon as the rain is supposed to be over, give the piece a dressing of soot, or soot and lime, or something else that way, in order to render the seeds distasteful to birds who prey on this seed so destructively as often leads to a belief that the seeds must have been bad, when it is found that none make their appearance; for we have seen seeds, which on a trial (in pots) seemed very good, produce nothing but common annual weeds when sown and left exposed to these depredators. Scarce a pile escaped them, save here and there a plant of Clover or Trefoil. The seedsmen in these cases often get unjustly blamed, while an enemy has been silently undoing all the work.

3rdly. In particular situations, as those exposed to more than ordinary wear and tear from the traffic over them, the ground must be more than ordinarily rich and good in order to support the trying circumstances it is placed in. The same observations also hold good in slopes and other exposed situations, when a bright sunshine is more apt to affect an inclined plane, or rounded bank, than a place level, or nearly so. We urge particular attention to this point, for in many instances, where it has not been attended to, the slopes present a scorched-up appearance immediately a few hot days set in in summer; and as they are generally in such positions as to present themselves always to view, it behoves the operator, when preparing such things, to keep in mind that more than the ordinary amount of good stuff is wanted for slopes and other places presenting a steep angle to any direction likely to be affected by the sun.

Having said that slopes ought to be indulged with good materials, we may as well give young amateurs a hint, that in laying out or forming such banks, an incline called "two to one," is steep enough for most purposes, which is a base of two feet to every foot perpendicular; we are aware that ground-work is often steeper than that, but it is not so well, and, of course, it is more exposed to droughts than when of more moderate inclination. Such places ought always to be carefully turfed over, for unless done so, it often happens the loose earth gets displaced, and the feature of the plane is broken at a place where it ought to be retained in great exactness.

It is needless to add, that when it is determined to sow seeds the stones must be carefully removed from the top, and even those likely to work to the top ought to be removed, for many which are a little below the surface at sowing time get to it afterwards, by the soil shrinking on all sides of them, and rolling is but an ineffectual way of disposing of them afterwards; certainly, it must be rolled, and that frequently, but the roller will never press the stone any lower than just level with the earth-work, and, consequently, liable to obstruct the scythe, &c., ever afterwards.

We may conclude this article by calling on the ingenious friends of horticulture to set their inventive wits to work, and see if a mowing or grass-cutting machine cannot be contrived free from the defects complained of in the machines we have; for, while ingenuity has been put to the test to furnish implements or machines for objects which before required but little labour, it certainly reflects but little credit to the mechanical portion of the horticultural world that the important and laborious duty of cutting a large breadth of grass should have been so little studied—for while rival "fumigators" and "budding knives" strive for the honours of public patronage, the old scythe, scarcely

altered since the days of our great grandfathers, has to do the same work now as then. Assuredly, this implement has not reached the summit of perfection yet, though much improved by Boyd; so that we should like to hear of some ingenious friend to horticulture taking up the matter, and presenting the world with a something simple in its uses and construction, quicker and more uniform than the scythe, and free from the defects of the machines of "Budding and Shanks." Probably, there may be some such instrument in use in some remote district not known to the rest of the world, the same as the Scotch reaping machine was, and might perhaps have remained, had not the parade by which another one was ushered into the world called it forth, not only to vindicate its own merits, but to defeat the much-talked-of machine of the "go-ahead American." Doubtless, some of our readers will remember seeing a drawing of the Scotch machine in Loudon's "Gardeners' Magazine," some twenty-five years ago, or more, when the inventor, Mr. Bell, explained its constructions with unassuming pretensions, and certainly, without that clog to a useful contrivance, "a patent;" for though, in some of the intricacies of mechanism, when it is applied to manufacturing and other purposes of an extensive nature, "a patent" may remunerate the inventor, we question much whether any individual who secured to himself the exclusive right of making boilers of a certain shape, or pipes, tanks, fumigators, sulphurators, or glass walls, was ever benefited to the extent of the outlay the patent right incurred; besides which, the science of horticulture has, of late years, been freed from that description of seecree and protective enactments, which, in our younger days, tended to mystify the calling rather than to dignify it.

J. ROBSON.

CULTIVATION OF TURNIPS.

(Continued from page 265.)

WHEN Common Turnips are sown very early they require as much, or more, space than Swedish Turnips; and if plenty of room is allowed them, the former often, under good cultivation, produce a greater weight per acre than the latter. Therefore, when sown in the first earliest season, it is best to drill them at twenty inches apart between the rows, and set them out at eighteen inches apart in the rows. After having managed a crop of early Turnips in this manner, they will, in favourable seasons, generally produce a heavy crop; but they must be fed off, or pulled for use, at the period of maturity, otherwise they soon lose their nutrition, and get rotten.

The Common Turnip cannot be so successfully cultivated when the land is hard underneath as the Swedish Turnip. In fact, as a general rule, the land cannot be made too light, an illustration of which is contained in an old saying, "When the land is in good order, plough once more to ensure a crop."

In choosing land for the growth of roots, I am in favour of light land for Common Turnips, and strong loam for Swedes.

In making the land up for drilling, I think it should be ridged-up into such sized lands as the nature of the soil requires, so as to lay it dry in the winter months; and I find this crop succeeds best when drilled upon the flat. Upon very dry soils, the larger the lands the

better, there being fewer furrows left to make the crop irregular in growth, or to induce the sheep to lay in them to a disadvantage whilst feeding off the roots. Indeed, wherever it is intended to feed the crop by sheep on the land, as is often the case upon loamy land which becomes very dirty from treading during the winter months, I find it answer a much better purpose to make the land up into lands of fourteen turns with the plough, and leave a deep and decided furrow, than to make up small lands of five or seven turns, for the sheep will avoid lying in a deep furrow, whereas numerous shallow furrows prove a complete trap for them, by which many, in some seasons, are lost, by rolling into the furrows on their backs.

It is unusual to make the land into stretches for Common Turnips, although excellent crops may be grown in that manner, the crop not requiring the depth of soil which is necessary for the Swedish Turnip. When this crop is drilled upon the stretch, it is not so likely to keep sound during the winter, for the hoeing and interculture serves to remove the soil from the plants, and leave the roots exposed to the effects of frost, &c.

In manuring for Common Turnips, I am aware there is a general impression that artificial manures which are best for Swedish Turnips are likewise best adapted for the production of the common varieties; and it is so, to a certain extent; that is, when they are sown at an early period for forward consumption.

Having stated, in a former paper on manuring for the Swedish Turnip, that I considered guano, or any manures rich in ammonia, could not be advantageously applied to that crop, I beg now to state, that the same rule applies to early-sown Turnips. But in applying artificial manures for the main crop of Turnips, for general purposes, and winter consumption, for which purpose they are not usually sown until the middle and latter end of the month of July, it becomes a different case altogether; for the Turnips, when sown at this advanced period, scarcely ever arrive at full maturity before they are consumed; they will, therefore, bear the stimulating action of guano, and other ammoniacal applications, without injury; nor does frost, and alternate changes of the weather, affect the crop seriously when sown at this late season, the roots being generally in the vigour of growth, and fully covered with leaf, during the early part of winter. It can, therefore, be made advantageous to stimulate the plants for the purpose of inducing a luxuriant foliage. This being the case, I propose, as the best manures for the varieties of Common Turnips, a mixture of two hundredweight of superphosphate, and one hundredweight of Peruvian guano, with twenty bushels of ashes per acre, upon land in a fair state of tillage previously; and in case any extra manure may be required, apply, as an addition, a quarter of bone-dust by the drill, or two hundredweight of guano broadcast, harrowed in at the time of sowing. I do not, however, recommend the use of the ordinary drill with ashes, under all circumstances, for, in many instances, I have noticed the superiority of the

growth of Turnips when the manure has been applied with the water drill. Many farmers are, no doubt, induced to use the ordinary drill because they happen to possess it, rather than hire the liquid drill; but I think the latter is quietly making its way, in preference to the ordinary turnip and manure drill; nor is it all surprising, when it is considered that in the generality of soils the only use of drilling ashes with other manures is to effect an equal distribution, for which, in labour, a much greater expense is incurred than by the use of water.

There is an advantage in using the liquid drill in a dry season—the seeds will vegetate quickly: whereas, using ashes in a dry state, mixed with manures, has the effect of retarding the vegetation of the seed. It is further useful in applying the manures in a soluble state, which divides the particles of manure more minutely, and therefore accelerates the growth of the young plant.

The best manures for Turnips, to apply by the water-drill, is from two to three hundredweight of superphosphate, and one hundredweight of Peruvian, or Bolivian guano per acre, mixed with from 300 to 400 gallons of water per acre; the larger quantity will not be too much in dry weather; indeed, more may be applied with advantage if it can be readily obtained.

I am of opinion that considerable improvements are required in the drills hitherto in use; and I make no doubt, as their advantages become better appreciated, that the ingenuity of our implement makers, and the scientific research of our chemical manure manufacturers, will soon supply the desirable improvements.

I have abstained from any remarks relating to the cultivation and management of stubble Turnips in this article, because I propose to make it the subject of a separate paper at a future time.

JOSEPH BLUNDELL.

ON THE MANAGEMENT OF SILKWORMS.

WITH COMMENTS AND ADDITIONS.

By the Prior Jacopo Ricci.

(Continued from page 266.)

MANY writers have treated of the diseases of Silkworms, but have generally, especially the more ancient, attributed them to natural causes in the constitution of the worm, instead of to their real reason. Modern authors, amongst whom the most remarkable is Count Dandolo, wishing to reduce the treatment of Silkworms to a certain system, have demonstrated that these diseases proceed almost entirely from the carelessness of the owners, and may be prevented, and even cured, especially at the commencement. But to form a clear idea on this interesting subject, we must revert to what we said before, that the worm is created to live in the open air, but that the cocoon being valuable to man, he has made it a domestic animal, and on this circumstance depends the diseases to which it is liable.

If we examine the creature's structure, we shall find it perfectly adapted to fulfil all the objects of its existence, and man should assist it in the execution of those functions, by an enlightened system, and not destroy it through ignorance, avarice, and prejudice. Not choosing to act thus, the husbandman either gives up keeping the worms, or deriving small profit from them.

Repeated experiments have shown, that from the time the eggs are laid diseases of various kinds may be introduced into the establishment. They may be occasioned by

keeping the room in which are the eggs either too hot, or too cold, or too damp; also by heaping the eggs upon each other too thickly. If the temperature be at 10° or 12° R. (55° or 59° F.), the eggs will not acquire the ashy line natural to them when they have been laid three weeks, and which shows they are likely to be generally prolific. Worms hatched from such eggs contain the seed of diseases which sooner or later prove fatal. If, on the contrary, the temperature be too high, there is equal danger of the eggs being injured, and the worms unhealthy. Again, if the room be damp, the embryo contracts disease, which develops itself with the growth of the worm. If the eggs are so heaped together that the air does not circulate freely around them, even in a dry room, they will ferment and spoil, both in a high and low temperature, and disease is certain to appear among the worms.

But should the eggs be properly cared for, the worms will be liable to sickness, if proper precaution be not observed in hatching them. If too hot they will hatch prematurely, and the worm will be of a reddish colour. If too cold, and the hatching be retarded, the tender creatures will suffer more or less according to the time they are so treated. But the agriculturist must not stop here.

Though the primary cause of disease may be found in want of care in the management of the eggs, he must take the greatest possible care of the worms during the first four stages, or they will suffer. We must take care they are not crowded; that want of ventilation does not occasion a stagnation of damp air; and that they are not fed with wet leaves. It will not be useless to repeat what has been previously said.

If the worms be too close to each other they do not grow equally. Some are healthy and large, others small and stunted; consequently they do not become torpid at the same time. Those who eat most, sleep first, and are then exposed to suffocation from the leaves given to those still awake, and their health must suffer by being surrounded with damp leaves and other filth.

Many become putrid and die; others cease to eat, and perish in a few days; others continue to eat languidly; while some recover, but are small and imperfect. If the ventilation be neglected, as is too often the case, the air stagnates, fermentation is generated, and the necessary exhalations checked. The increase of heats, damp, and impure air, make the creatures weak and ill. Damp leaves increase the fermentation, and, unless the prescribed means be resorted to, the health of the worms is quickly affected. Again, leaves which have been frost-bitten or otherwise injured, may occasion diseases in the worm, especially during the four first stages. After the fourth stage, the insect is subject to various fatal diseases. These are principally the spot, the negrone, the calcinaccio, and the giallume. Many writers think these are merely modifications of the same disease.

The *Spot* consists of black, brown, or red spots, which corrupt the skin.

The *Calcinaccio*, or turning into lime, shows itself by the insect becoming hard, and on being opened is found full of an earthy substance.

The worm is called *Negrone* when, in forming the cocoon, the creature becomes black and wrinkled like a mummy: the French call this *Les Drugées*.

The *Giallume* (called by the French *Les baches*, *Le Gras*, or *La Saune*) is known by the worms becoming yellow; they lose their appetite, become transparent and swelled, or shrunk and flabby, and at last die.

However, as these diseases are usually caused by carelessness or ill-treatment of the worms, and as it is necessary that the most ignorant should understand that it is so, we will trace them to their origin. Many, perhaps, will not comprehend me, but if I set forth clearly the means whereby disease may be avoided, some even of the most stupid may derive advantage. We must remember that Silkworms, in consequence of their rapid growth, eat a quantity of green food, which, in comparison with that consumed by other animals, may be truly called enormous. This moist food contains many elements which do not nourish the worms, such as water, besides alkaline, acid, and earthy particles, which do not support life. Now, as the worm has no means of expelling extraneous matter, but a cutaneous exudation

or perspiration, it follows that, although the alkaline, and acid, and watery elements are thus carried off, the earthy particles must remain in the body, to be evacuated after they become moths. If the perspiration be checked, all these particles remaining in the body of the worm induce a chemical process which is the cause of all the diseases the creature suffers from.

The disease of the *segno*, or *spot*, is the highest degree of this process which decomposes the animal and produces one totally different. The various elements engender what chemists call reciprocal affinity, and destroy the animal matter. The black or red spots, which appear at first on the under side of the worm, are caused by the check given to the perspiration when they are too crowded, and they indicate that the worm is about to become hard and die. The complaint is not infectious; worms attacked by it are found amongst others perfectly healthy, and in the cocoons some chrysalises are hard and others not so, which proves that it depends on accidental causes. The disease called *Calcinnaccio* is of the same description; under its attack the worm becomes more or less hard, and is called calcined, because it is covered with a substance like lime or chalk. This disease occurs at every stage, but more commonly after the fourth change, and upon the bush before they skin, and sometimes to the chrysalis, and so, by a chemical process, the creature from a soft and corruptible substance is changed to one hard and incorruptible. Sometimes the chemical process reduces the worms to a mere mummy, and it is then called *Negrone*. Sometimes the decomposition takes another course, and the creature is changed into a soapy substance, extremely putrid and offensive. The cocoons thus affected must be wound immediately, or they will be spoilt.

The *Giallume* is of various kinds, or rather the same complaint assumes different forms, and is called by different names, but the causes are the same. Sometimes the worms are attacked by the diarrhoea, which is fatal to those affected, and very injurious, by reason of the fetid smell produced by it, to the others, unless they are promptly separated. There is another malady called *soffogamento* or suffocation, which is entirely owing to want of care. It is produced by damp, and heat, and impure air, engendered by the fermentation of the leaves, and which will soon destroy all the worms—turning the establishment into a sepulchre. The worm will die sooner in damp air than in dry, even though impure, if the temperature be equal.

Having thus glanced at the principal maladies of Silkworms, we pass over many others which are not so universal, which do not prevail in all climates, nor with all food; for it would be tedious to enumerate those peculiar to different localities. But the most trustworthy writers, in different countries, have observed, that all disease usually proceeds from the same cause—want of care in the management of the Worm. The Silkworm, like other caterpillars, is formed for the open air, and if man, for his own advantage, brings it from its own country and cultivates it, he should endeavour, by every means in his power, to remedy the variations of climate, and other circumstances which affect its well-being. It is very difficult to frame a system, and to adhere practically to it, so as to avoid all these inconveniences; but unless this is done, the Worm must suffer more or less. Of course, the best system of treatment is that which follows as closely as possible the law of nature. And he must not be surprised, if acting upon the old plans, and leaving the supervision of the worms to ignorant bigoted people, the produce of silk should be scanty, and that there should be constant sickness among the insects. The only matter of surprise is, that under such treatment any advantage at all should accrue to the owner.

The eggs having been ill-kept, are hatched in an ill-regulated atmosphere, and amongst fetid exhalations. The little worms are first heaped together in suffocating heat, then exposed to a cold temperature, which in time becomes unwholesome, and unfit for respiration, they are left crowded together amidst the fetid exhalations from their beds, which if changed are not immediately removed, the attendants not being sufficiently alive to the prejudicial effects of the fermentation.

When the beds are to be changed, the whole family assemble in the room, forgetting that the smell of the

human body injures the worms, which they take up by handfuls, throw upon plates or dishes, and afterwards return to the new beds, with most likely some of the filth from the old ones adhering to them. No care is taken to give them light, that most valuable stimulant to animal life.

(To be continued.)

THE HISTORY OF FRANK RANDALL.

By the Authoress of "*My Flowers*."

(Concluded from page 248.)

WE have followed Frank Randall, my readers, from steady respectability to a state of confirmed drunkenness. A short, but awful journey! We are now going to attend him during the remaining stages; and it would be well for us all to consider *our* ways, as we mark his downward course. We may not all be drunkards; but we may be habitual breakers of one of God's commandments, at least; and "he that shall offend in one point is guilty of all." So let us not lay false comfort to our hearts, or say to ourselves "peace, when there is no peace."

"Frank Randall became a confirmed drunkard, so that at last I told him that I could no longer keep him in my employ, and that he must look out for another situation; but his promises of amendment were so earnest, and his appeals so pathetic, that I resolved to give him another trial.

"Shortly after this I was called away for a few days, and on my return, was informed by his fellow-workmen that he had been taken ill in my absence, and was gone home—a distance of six miles into the country—where he had taken a cottage, and was in the habit of walking home on a Saturday night (staying during the week in a lodging in the town). I found, afterwards, that immediately I left home he rushed away to his drunken friends, and was seized with illness during a state of intoxication. I understood he expressed a great wish to see me, and, accordingly, I took the earliest opportunity of riding over to his house. As I approached his dwelling, I saw him seated upon a stile in the lane, inhaling the breezes of that early summer day, hoping, I suppose, to drink in renovated health by its invigorating breath. But alas! how greatly was he changed! I could scarcely have credited that so short a time could have effected an alteration so fearful! Death, I felt persuaded, was stamped upon his brow; he complained of a violent pain in his side, and a constant and wearying cough; decided consumptive symptoms had shown themselves, and the only medical man that had seen him was the club-doctor, when first taken ill. A very able physician, was, I knew, a daily visitor at a neighbouring gentleman's seat, and I begged him to call at the cottage, which he kindly did; and, on his return, informed me, that the only chance for his life was to get him into an Infirmary as an inmate, where he could have good nursing, and the best advice.

"On paying him another visit, I found his removal impossible, for he had become rapidly worse; and I now asked whether he would not wish to see a clergyman, to which, with great readiness, he assented. Would that I could have taken every intemperate man to his death-bed; they then would have seen to what wretchedness, both of mind and body, this fearful sin reduces its victim! They would have heard the self-accusations of a broken heart; the deep wailing for opportunities lost, and a life mis-spent! 'Oh!' he said, 'that God would once more raise me up, what a different life would I lead;' but it was evident that nothing short of a miracle could restore him to health. Poor Randall's cottage was situated in a distant hamlet of a parish, whose vicar was well known to me, and I lost no time in begging him to call. In a day or two afterwards, I received a note, telling me that he had seen him several times; that he was much interested in his case; that he had discovered that he had never been admitted into the Christian Church by baptism; that he proposed administering that sacrament to him on the following day; and as a witness was required in cases of adult baptism, he begged me to come over and be present on the occasion.

"I reached the cottage at the appointed hour, and found the excellent clergyman arrived before me, preparing poor

Randall for the service; and I shall not easily forget the solemnity of the occasion. It was a bright, clear, summer's day, and all was perfectly still in that isolated spot, except the gentle murmuring of the fitful breeze as it quivered through the branches of a large pear-tree that overhung the cottage. Beyond this, the only sounds were the deep tones of the vicar's voice, and the laborious breathings of the dying man, as he sat, propped with pillows, in an arm chair, while his wife and I were the only audience present. The vicar's voice and manner were deeply impressive, and the words seemed to fall with double weight on the ear upon so momentous an occasion.

"The service was concluded; and after paying a sad farewell to the invalid we left the cottage. I only once saw him again, and he was then almost insensible of my presence. A few hours passed away, and his spirit was before the throne of the God who gave it; his wife a widow, and his children fatherless!"

"Often, when on a visit to the vicarage, have I stolen away to the quiet churchyard, and as I gazed upon the green mound which covers his grave, I have pondered over the life of poor Frank Randall, and thought how full of lessons and of warning was his melancholy career."

Let us ponder upon his life and death too. I have already often laid before my readers the horrible sin of drunkenness, and urged and implored them to flee from it as from a serpent. Here is another instance of its awful consequences, one which passed under the very eye of the writer, and which, indeed, is "full of lessons," and full "of warning."

It speaks to members of benefit clubs very pointedly, and very loudly. It shows the peril of holding their meetings at public-houses. It warns them to avoid the haunts of sin; to keep their useful and desirable institutions holy; to assemble together in places where there is no temptation to commit sin; and also to be strict in their rules, and temperate in the refreshment they partake of; for such is the heart of man, that the least liberty given to the flesh lets in a flood of iniquity. When the managers of benefit clubs are men who *really* fear God, they do not dare to hold their meetings even *near* the haunts of Satan.

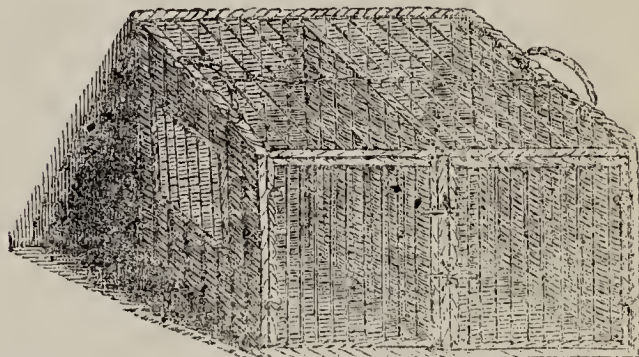
It speaks pointedly and loudly to woman. It bids her be sober, and a keeper at home; it bids her be clean, careful, attentive to the comfort of her husband, careful of her money, and watchful over herself. It bids her beware, lest her own conduct drives her husband from his own fireside; nothing is so likely to do this as an uncomfortable, ignorant, dirty, quarrelsome, or *talking* wife. I do not mean, a chatty, cheerful-spoken wife, but a *grinding*, tiresome, everlasting talker. No excuse for sin will be admitted at the judgment day; but when we provoke one another, much of our brother's blood will be asked for at our hands.

It speaks—oh! how loudly it speaks—to man! It says, flee from the very first approach of sin; "abstain from all appearance of evil;" "sin, when it is finished, bringeth forth death." It says, beware of a steady character, when it has no root. It is a subtle snare. It "indeed appears beautiful outward, but within is full of dead men's bones, and all uncleanness." Oh! beware of every respectable appearance that does not spring from *faith in Jesus Christ*, and that is not the fruit of His Spirit. It never can stand in the day of trial. Satan walks and simpers beside respectable *worldly* people; he is not a bit afraid of them. Oh! let him not walk softly and fearlessly beside you, dear readers! Doubt, suspect yourselves, if you do not "count all things but loss, for the excellency of the knowledge of Christ Jesus;" and you can tell in a minute whether you do that or not. All else is Satan's handiwork, and leads to death. There is only one "strong tower," and that is "the name of the Lord." *Flee into it*, and leave your worldly respectability behind; *it* will follow *you*, depend upon it, and abide with you too; but if you stay behind with *it*, you will mourn the day that ever you were born. Readers! ponder much over the grave of poor Frank Randall!

ADVICE TO POULTRY EXHIBITORS.

HAVING so much opportunity of observing the health of the poultry at the different Exhibitions at which I am engaged, I feel anxious to communicate the causes which I fancy produce the evils of which we have so often heard complaint. In the first place, I wish to say a few words on the form and manner of sending poultry. Many of the birds are placed in expensive baskets, but these are badly constructed for their comfort and health, some being too tall, unwieldy, and unnecessarily large, with the sides much too close for the free circulation of air. I would recommend an open-sided basket, without canvass; for, from my observations, I am convinced that canvass is one of the worst of all materials with which to surround a package; the birds, sitting down low, are kept by it in a heated and bad atmosphere; and most of those appearing worse for the journey, at the last Plymouth, and other Shows, came in baskets lined with canvass, boxes, or very close-sided packages. My own White Bantams were in a close basket two days, and, although well fed, were very ill, but easily recovered by attention. I purchased two pens of "Hamburghs," all of which showed evident symptoms of exhaustion, and I discovered they came some distance in close or canvass-sided baskets. The symptoms were those of what is called "Exhibition fever;" swelled and pale faces, froth from the eyes, a drooping tail, loss of appetite, and appearance of great exhaustion; but I find a careful attendance, with generous diet, green food, &c., soon brings them round again; and I must state my belief that this complaint is not contagious, having myself bought a White Cochin cockerel, from the Birmingham Show, in which this disease was much developed, and although the bird was turned to run with all my stock, the disease was not communicated to them.

I give a sketch of the best basket I have seen, which holds two pens of birds; the top of open-work; apertures at each end; a closely-wickered division; and open-work doors, which fasten in the middle. Let there be no canvass covering.



I will take this opportunity of requesting parties, generally, to be more careful, as they can hardly expect valuable fowls to come safely 300 miles, packed, as I received them at Plymouth, in orange boxes! and others in baskets barely large enough to contain them if dead!

I would also wish to call attention to the very careless manner the labels are attached; I should say one out of each ten is generally misplaced, causing much confusion in penning the birds, and still more after the exhibition, in replacing them in the baskets.

At the last June shows, I believe the sales have fallen off, and this may be attributed to the foolish prices attached. I do not allude to the reserve, or prohibitory, sums of a hundred or a thousand pounds, but to three guineas on a pen of Bantams, worth, at most, four-and-sixpence. In this case, the owner, a poor woman, wished to sell, but I suppose she had heard of high prices, and wishing to participate, over-priced her birds, and so had to take them back again. In many other instances, instead of fair market prices, about double their value is marked on them.

I am very anxious to see a better material used for sprinkling over the bottoms of the pens. I have seen sand used, as at Birmingham; long straw, in the basket pens, at Cheltenham; and sawdust, at the late Plymouth shows, and I observe great objections to all of them: sand, as dirtying the birds; and sand, as well as the saw-dust, mixes too much

with their food. To the long straw is to be objected that it is difficult to remove in the cleaning. Notwithstanding my experience, it is difficult to propose a material that shall be unobjectionable, and I can only suggest that straw cut in four inch lengths be tried, as being a dry, clean, material easily removed.—W. CUTTER, *Bathampton, Bath.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover Square, on Wednesday, the 29th of June.

SEWERAGE MATTER.—Professor Way, the consulting chemist to the Society, favoured the Council with his views on the management of the sewerage matter of towns, and its agricultural application, reserving for the paper he was preparing on the subject, for the Society's Journal, the full details intended by him to illustrate and confirm the views in question. He first referred to the fallacious pretensions of many plans proposed for the extraction and concentration of manuring matter; and then explained the sanitary management of excrementitious matter in Belgium and in France, particularly noticing the recent valuable report made to the Board of Health by Mr. Rammell, on the arrangements on this subject in Paris, and to the Poudrette manufacture in that capital. He then proceeded to explain the difference in reference to the London sewerage, on account of the large amount of water which entered into its composition. He estimated this supply of water at $44\frac{1}{2}$ millions of gallons a day, and considered that all excrementitious matter, sooner or later, found its way in a comminuted state into this large mass of sewerage. He regarded rain-water, too, as being highly charged with manuring matter; and detailed some interesting results of experiments made on street-water as it rushed to the gully-holes of the sewers, which showed it to contain a much larger amount of soluble salts, especially salts of potash, than sewerage water, and proved that such washings from the streets improved rather than impaired the manuring quality of the sewerage water generally. The sewerage matter was in two states:—1. In solution; 2. In suspension. He explained that the solid matter in sewage was only the woody or fibrous refuse of solid excrement, while ammonia and the more valuable substances were retained in the liquid form. At present he was aware of no method to convert sewage into solid manure that *would pay*. It had been said that the liquid left after the removal of the insoluble portion of sewage, was "inodorous, tasteless," and might be thrown into the river; such a result might fulfil sanitary but not agricultural conditions. The question, however, was a double sanitary and agricultural one; and the two interests combined would greatly facilitate their general and special objects, which were much retarded while each party stood aloof. Professor Way then detailed the various substances proposed for the filtration of sewage, and the various precipitants to effect the subsidence of its grosser matters; he referred to the plans of Higgs, Moffat, Stothert, Wickstead, Herapath, and Dover; to the peat-charcoal filter of the sewage manufactory company at Fulham; and to gypsum, sulphates of iron, magnesia, and zinc; the alum salts, burnt clay, and peat and animal charcoal, as precipitants and filtering substances respectively. But no plan was efficient that does not include, in the solid matter obtained, the various salts dissolved in the original liquid. The milk of lime employed in Higgs' process clears the sewage from colour, but leaves in it nearly all the organic matter. London water, too, was hard, already holding carbonate of lime in solution; when quicklime was added, a large precipitate, consisting of double the quantity of chalk, was thrown down, and thus increased, by so much comparatively inert substance, the solid matter obtained, 30 grains of chalk being obtained in this manner from every gallon of sewage liquor. He would prefer separating the sewage matter by itself; but even that would only contain from $2\frac{1}{2}$ to 3 per cent. of ammonia, and would not pay. He recommended farmers to avail themselves of the strongest and best manures, as occasioning less expense in the original cost, carriage, storing, and application. Many

methods had been proposed to facilitate the mechanical separation of sewerage matter and to deodorise it; but in all these, the valuable salts were left behind. Peat and other charcoal did not arrest ammonia, as had been supposed, but absorbed it as gas by a peculiar power of surface which the charcoal exercised; but water, having a tendency to unite with ammonia, washed this gas out again; charcoal, however, retained the solid matter, and deodorised it, but did not separate the soluble salts. He then referred to the application of burnt clay on soils to the purpose of absorbing manuring matter; but showed that the effect of carrying out manure to the field was very different from that of bringing a portion of soil to the manure, the relative proportion in this case deciding the result. Soil, in fact, could not be used as a filter; it could not economically be taken into the town and then out again into the fields. No plan, he believed, was at present known by which the whole of the sewerage matter could be obtained in a solid state, excepting by evaporation; and that of course was out of the question. Prof. Way was aware that every one who took a deep interest in any subject, looked with a particular favour on views which he himself entertained and had originated; and accordingly he felt a natural interest in the successful application of the silicates, to which he had often made reference in that room: he really believed, however, that these substances, or something analogous to them, were the only likely means by which the potash and the other saline matters could be removed from the sewage liquor in a solid state. But he considered it unwise for farmers to make manures, while they could purchase them at a cheaper rate than they could themselves manufacture them. Unfortunately those low lands that could most easily be reached by water, were the very kinds that least required manure. Liquid sewerage, as a whole, he thought offered the largest prospect of success, as the whole of the manuring matter was, in that case, utilised. A disagreeable odour was occasioned by its sulphuretted hydrogen, but there was no great loss of manuring value. The usual outlets of sewers naturally occurred in those lower levels which, as he had just remarked, least required manuring, being beds of river alluvial deposits, consisting of clay nicely tempered with sand. The poor thin high grounds, particularly in sandy districts, were those which most required the aid of manure. Pumping the sewage up again was the only plan; but half-way measures would be a failure. The farmer should have the power of using it on levels as high as the towns. In some of these, as Exeter, situated on a circuit of hilly ground, it would be waste of power to bring the sewage down from them to the lower outfall, and then to pump it up again; but it might, he thought, be economically employed in contour lines around such towns. But generally speaking, the distribution of liquid-manure, to be fully available, should be effected on an extensive system; it was ridiculous for a place like Edinburgh, with its large amount of inhabitants, to supply liquid-manure for only a few thousand acres; such excrementitious matter ought to yield manuring elements for hundreds of thousands of acres, if applied at once to the land.

POULTRY-YARD REPORT.

You ask for this year's experience in rearing and management of poultry. Mine is not very important in character, neither, at present, have I a large number in the yard; but such as it is, I give it you correctly, for the insertion in your paper, if you please.

Eggs produced from the 5th of February to the 5th of June, from

2 Cochins	108
5 White-faced, &c., Spanish	256
3 Spangled Hamburgs, from the 25th of February to the 5th of June	181

The Cochins were in their nest, and with young, for six weeks of the above time; none of the others have been broody.

Subsequent to the 5th of June, my Spanish have not been so regular, and the Cochins have again been mothers; but the Hamburgs continue laying an egg each nearly every day.

I vary the food very much—in grain, I give barley, wheat, and Indian corn. Of soft food, I give sopped bread, potatoes, barley-meal, and rice; plenty of cabbage-leaves, grass, and other green food; occasionally worms, but no meat.

All have been healthy but my white-faced Spanish; one of those pines, looks sickly, gets off her food, and two of them have lost feathers off the head.

I have sat 110 eggs, but have only hatched fifty-four chickens; at the present time I only have forty, having lost fourteen by death, casualties, &c.; this is very bad luck, but most of my friends have had the same. I cannot account for it; some of my nests are near the ground, others on shelves; that seems to make no difference.

My Cochin and White-faced are only fourteen months old, but the Hamburgs are two years old.

Sat 24 Cochin eggs: now living, 7 chicks.

„ 46 White-faced Spanish „ „ 27 „

„ 38 Hamburg „ „ 6 „

The casualties were confined to Spanish and Hamburgs, no Cochin chicks having died. Thus, age of parents gives no criterion to judge by.

I find Cochin fowls, both young and old, eat by far the most food, and yield the fewest eggs; for had I given you the results from the 1st of January to the present time, it would have been far more unfavourable to the Cochins. I shall not increase, or, perhaps, even continue my stock of Cochins, both for the above reasons, and also because they are ungainly table birds; and I find, by observation and experience, that there is no certainty in the plumage of the young birds; they as frequently differ from, as follow, the plumage of the old birds from which they descend, thus making the production of good birds so uncertain. But Spanish always breed uniform; Black Spanish and Hamburg the same. These two breeds, also, never become broody.—B. S. S., *Redland, Bristol*.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

SEA KALE (*A Surrey Subscriber*).—In your two-light frame you may produce the quantity of Kale you mention (two weekly cuttings). Tan would give heat sufficient, and it would take two large cart loads; place a covering of littery dung, or fresh gathered leaves upon it, and upon that nine inches of good loam to put the roots in. To obtain plants you must devote a piece of ground for the purpose, and sow a portion sufficient to fill the frame every year. Old roots that have forced are of no use for forcing in that way. To blanch the Kale, all that you would require would be a dense covering of straw and mats to keep out the light. You should fill half a light at a time, in order to produce a succession.

BRAMAH-POUTRA FOWLS.—Mr. J. J. Nolan informs us that he has received some of these from America; and adds, that he thinks them a distinct race, although "a sub-division of the Shanghai." He also says that they lay "as many eggs, but as near as possible the size of a Turkey egg." As we entertain grave doubts upon these points, we will say no more upon the subject, until a little more experience confirms or removes those doubts.

FOOD FOR YOUNG SHANGHAES (*E. S. Roberts*).—Barley, whole and in the state of meal, wheat, boiled rice, Indian meal, with the scraps of meat and bones from the house, and plenty of green food, such as grass, cabbage and lettuce leaves, are a good varied diet for Shanghai cockerels and pullets.

BLOOD-HOUND PUPPIES (*B. H.*).—We have a letter for you.

LEMON BALM WINE.—A Clergyman has favoured us with this recipe for "J. F."—"To 10 gallons of water add 18 pounds of loaf-sugar, and the whites of 12 eggs, well-beaten; put all into a large pan, and let it boil till the scum rises; take off the scum into a sieve, and return all that runs through till all the scum is off, then turn it into a vessel to cool; take 2½ pounds of lemon balm (pick the delicate tops of the lemon balm); put it into a well-seasoned cask; and when the liquor is as cold

as summer water, pour it into the cask, and add a tablespoonful of best top yeast; press down the lemon halm with a stick, and fill up the cask with what runs over every night and morning. It will work violently for two or three days; let it work ten days; then bung it up close, and that day month bottle, cork, and wire it."

ERRATUM.—The *small rods*, mentioned near the bottom of the second column, p. 241, should have been described as one-and-a-half inch, instead of half-inch in diameter. The latter would not bear the weight.

DORMANT LIME TREE.—W. H. says "One of a row of limes, from 15 to 20 feet high, advanced with the others, this spring, to the point of the full swelling of the buds, and there stopped. The others came into leaf; this one alone has not burst a bud; yet the buds appear ready to burst, and are full of sap: the twigs are lithe, as usual, to the very extremity." It is quite uncertain what ails the tree, but we have little fear about its making a midsummer start; at any rate you can do no more to it than you have. "The dwarf *Rhododendron* bed you gave me some advice about a month or two ago has just gone out of flower, and rather alarms me by its vigorous growth. Should the plants be pruned back?" The *Rhododendrons* are doing remarkably well, and you must not touch a shoot or a leaf of them this season, nor until they go out of flower next year, and then you can cut them back to anywhere you like; but our other readers must be told that your plants were only lately put into the bed, and that alone is the reason for sparing them from the pruning knife this season.

BELLA DONNA LILY BULBS (*C. C.*).—If you have a well-drained border, of good soil, in the south front of your house, or any wall, you may plant the bulbs at once, the sooner now the better. Place them six inches below the surface, nine inches apart, and six inches from the wall; but, first of all, read what has been said about them at Claremont last October. In the open ground they will grow in any soil that will carry good cauliflower, or, indeed, any good kitchen-garden ground. They are not very good bulbs for pots, and the chief reason is, that they receive too much kindness that way. We only know one amateur who does them well in pots, and he certainly does them better that way than any one in England, as far as we know, and so he does all the true Amaryllid tribe, including the very rare *Amaryllis blanda*, from which he has obtained crosses just at the time we all thought this fine bulb was lost to Europe. He pots his *Bella Donnas* in the same kind of strong yellow loam as we recommended, and without any mixture of leaf and peat, with which so many fine bulbs have been sacrificed. He puts one bulb in a number thirty-two pot, an upright one, and only half buries the bulb in the soil, and he leaves an inch empty at top to receive copious waterings when the leaves are full grown; he does not "shift" one of these till they break the pot with their roots. He begins to water by the middle of August. The flowers are up in a month; after them come the leaves, and the bulbs are kept as cool and airy all the winter as possible, they often get two or three degrees of frost. In February, March, and April, they get abundance of water; by the middle or end of May they are at rest, and are kept dry in the sun till the time of watering comes round in August; or say strong loam, upright pots, no shifting, very cool and very airy all winter, a large supply of water in the spring, and a hot dry summer in the open air, will grow the *Bella Donna*, in pots, to perfection; but coddling and messing them about soon spoils them.

FLOWER GARDEN PLAN (*Stripling*).—Remarkably well done for an Italian garden on English soil. There is one small principle violated in the disposition of the beds D, both the small and large sizes; these are in the middle of grass figures, and the grass figures are bounded all round by walks, therefore the outlines of the beds next the walk should be an exact repetition of the lines of grass. The broad ends of the smaller beds D should have two corners, with a very small curve between them, to correspond with the green carpet—the rest of these beds are quite right. The four large beds D should be altered on the same principle; at least, we must say so when the plan is engraved. In a private way, if the "governor" approves of them as they are, he has a perfect right to have them so. The chain pattern, all round, is not original, of course, but none the worse for that—your own way of planting it is quite original, and very good indeed; some would object to having the plants so high on the side next the house.

BEES—TO PREVENT SWARMING (*An Amateur Bee-keeper*).—"I have two stocks of bees in common cottage hives, which I nadired the beginning of last month (May), one with a bee-box containing about 250 cubic inches, the other with a large straw hive having a hole in the top. They have now nearly filled these with comb, and in the bee-box I can see that a considerable number of drone cells have been sealed over the last week. They also give indications of swarming—that is, in the middle of the day, when the sun shines hot, they fly about the garden in an agitated manner. What means should I use to prevent their swarming?" Had you super-hived your bees, instead of under-hiving, you could by this time have had some fine honey from them. However, as it is, you had better nadir-hive again, with a box not more than five inches deep, and the size of the hive—that is, if they appear to want room.

BEES—JOINING CASTS TO SWARM (*J. W.*).—"Can you account for the following result of uniting a cast to a swarm; and can you tell me how such a fatality is to be avoided? On the 23rd I hived a swarm, which in the evening weighed three pounds; on the same day I hived a cast weighing one-and-a-half pounds in the evening, these I united by knocking out the east, and placing the swarm over it. On the following morning, I found on the sheet spread under the mouth of the hive about 500 or 600 bees; before twelve o'clock the whole left the hive, and settled within a yard or two of the place on which the swarm had settled. I hived them, and weighed them, and found they had lost one pound ten ounces, so that my hive (swarm), after putting to it the cast, one-and-a-half pounds, had lost two ounces by the experiment. Is not this a strong argument against the practice? Would it not be better to hive casts separately, join bees to these in autumn, and feed them a little, they would have young queens, and this fearful loss would be avoided?" We have

united casts and swarms, for the last forty years, and never in a single instance has the like happened. Our method has been given in *The Cottage Gardener*.—J. H. P.

BEES.—E. H. says:—"Yesterday one of my hives sent forth a cast about ten o'clock, a.m. The cast was put into one of Payne's Cottage Hives (a new one), and in half-an-hour's time, the bees being quiet, the old stock was removed from its position, its entrance closed, and the cast placed on its stand, to receive the bees that happened to be out as they returned from the fields. I should have said, that the cast, when it settled, alighted in two clusters on the adjoining branches of a yew tree. In about half-an-hour after they were placed on the stand there was evidence of some confusion, which lasted till one o'clock, when all the bees left the hive. After being in the air fully ten minutes, they alighted again (this time in one cluster), but with considerable hesitation, on the bough where they had collected when they first swarmed. This time many of the bees seemed very unsettled and would not cluster. I hived them in an old common hive, and left them under the tree. The bees remained in it for about two hours, flocking in and out all the while. They a third time returned to the bough. I hived them once more, in Payne's Cottage's Hive, and sprinkled the inside with honey and beer. On returning to look at them in a short time they were all gone. I should add, that each time they were hived not one single bee was left upon the bough of the tree. What became of the bees I do not know, they may have returned to the old hive, which I had before this placed upon its stand. What was amiss in all this? What was the cause of the bees declining to remain in the hive? Their confusion, and the uncertainty of their movements, gave me the impression that they lost their queen on their leaving the hive the first time after swarming." In all probability they came out without a queen, and would have returned in the first instance to their parent hive, had it not been removed from its place. They did ultimately return, no doubt. It is possible they might have lost their queen, which would have produced the same result.

CERASUS SEROTINA (Scholasticus).—This is the American Bird Cherry. *Walks.*—As you can obtain neither chalk nor gravel, make them of coal tar and the finest portions of the sifted coal ashes which you say are abundant. The latter must be perfectly dry, and will then form a concrete with the tar; the addition of a little lime will improve the hardness of the composition. Never mind whether vegetation is later or earlier, plant deciduous trees when the leaves are becoming yellow; and vegetables in your kitchen garden about the times given in our calendars. The concrete mentioned above, spread over clay, makes perfectly tight water tanks.

WOODLICE (A Subscriber).—Gas lime drives them away, and they may be trapped by having two tiles set over each other one-eighth of an inch apart. Do not put the gas lime too near the Carnations.

SPANISH FOWLS EGGS.—Capt. W. H. Snell says that he had four weighed last year by Mr. French, of High Holborn, and they weighed 40zs. 3grs. each. From a subsequent letter, we find that they were double-yolked.

BALM OF GILEAD SEEDLINGS (A Country Subscriber).—You do not say where they are growing. Too much wet is the cause of their damping off; let them have less, and sprinkle dry sand among them.

YOUNG TURKEYS (G. L. Ec).—"Can any of your readers give me some information respecting the diseases of young Turkey chicks? Last summer I had twenty-nine hatched from two hens, and at about four or five weeks old they began to droop, were affected with cramp, apparent giddiness, blindness, &c., which at first was only at intervals during the day; and, notwithstanding all the remedial measures of peppercorns, hot wine, carraway-seeds, &c., which I was advised to try, they drooped, and one by one died. Thinking either the farm they were at did not suit them, or that the poultry woman who managed them was not skilful, I this year removed the Turkeys to another farm, with a very experienced, good poultry woman. The Turkey only hatched out eight, but for six weeks they were most thriving, but now one has died, and I fear that all the rest will do the same, as three or four of them are now, at intervals in the day, apparently quite giddy, with their head hanging down, shaking with a kind of cramp, and always in the morning with a sort of film over their eyes. They eat well at intervals, when for a time it passes quite off. We have taken every care to keep them dry and warm, and house them every night in a dry, warm place; but, as the disease seems a very marked one, perhaps there may be some remedy for it, and, if so, I should feel very much obliged to you if you could give me some information about it. The food they have had has been barley-meal and chopped onions." We shall be glad if any one experienced in raising Turkeys will give us an account of their mode of treatment.

POULTRY HOUSE.—H. T. would be obliged by the plan of a house calculated for keeping under one roof Ducks, Turkeys, Shanghaes, and Dorkings.

ERECTING GREENHOUSE (A Country Rector).—Pray consult our fifth and sixth volumes; you will there find abundant information on the subject.

BAD-TASTED BUTTER.—T. C. B. wishes us to state that he finds the remedy recommended by us on the 12th of May completely successful.

X. Y. Z., Morpeth.—The party you mention we believe to be respectable.

VINE (J. H.).—We should bend the stem down, and introduce it through the brick-work just below the sash. This is the most desirable plan, but it is impossible to advise positively without seeing the place and the Vine.

HAMBURGERS (Amateur).—The coloured plate of these in No. 4 of *The Poultry Book* should have been "Golden-pencilled Hamburgs." They took a first prize at the Metropolitan show last year.

HALF-DROWNED CHICKENS (M. M.).—Why not keep them in a wired enclosure until old enough to be more careful? Prevention in such case is certainly better than having to cure. When a chicken does fall into water, the best proceeding is to get it out again without delay and to dry it before a fire.

SPOT IN GERANIUMS (Devon).—There is no doubt that your plants are affected with it.

YOUNG VINES (Now a Constant Reader).—You may prune them now. See what we have said above about erecting a Greenhouse.

BRITISH QUEEN STRAWBERRY (Pluto).—Apply to its raiser, Mr. Myatt, nurseryman, Deptford.

OTTO OF ROSES (E. G.).—To obtain one drop of this would require, probably, the flowers from every rose-tree in your parish. To make rose water from the flowers, requires distillation and a proper apparatus.

INSECT-NEST ON WALL (J. L., Basford).—The patch of dirt on the wall enclosing thirteen cells, in which were grubs, was the nest of one of the Mason Wasps (*Odynerus*). The grubs were the store of food laid up by the parent wasp, the builder of the nest, for the young wasp-grubs when hatched.

NAME OF INSECT (Henriette).—The caterpillar in your Ayrshire Rose is that of the Common Vapourer Moth.

VENTILATION OF ROOMS (F. S.).—The best answer to your query is the following extract from a little work on "Domestic Economy," by Mr. Tegetmeier:—

"**VENTILATION.**—The only ventilation practicable in the houses of the working classes is that which is termed natural ventilation; which is caused by the ascent of heated air; the air which becomes impure by the action of the lungs, or by the burning of candles, lamps, gas, &c., or by the fire, is heated, and rendered lighter than pure air, it therefore rises to the top, and cold, pure air takes its place.

"Thus, to ventilate a room well, it is essential that there should be two openings; one above, by means of which the impure, heated air can pass out, and another below, for the entrance of pure, cold air.

"In dwelling rooms, as ordinarily constructed, the impure air is imperfectly carried away by the draught of the chimney; it follows that the whole of the room above the level of the fire-place remains filled with air in a partially impure state; and the openings by which air is admitted are usually left to chance, the cracks around and under the doors and windows being the means by which it gains an entrance. If these are not sufficient to admit a proper quantity of air to supply the draught of the chimney, the latter necessarily smokes.

"A much better plan is to admit the pure outer air, by means of a plate of perforated zinc placed, instead of a pane of glass, in the upper part of one or more of the windows farthest from the fire; the air entering through the zinc in small streams, becomes so mingled with the warm air of the room that a draught is prevented, and when the windows are opposite the fire, the whole air of the room is gradually and imperceptibly changed. If to this mode of admitting pure, cold air, be added an opening in the chimney, near the ceiling, to allow the escape of the impure, warm air, much will be done for health and comfort: this opening in the chimney, however, requires a chimney-valve to prevent any downward draught of smoke; the utility of this mode of allowing air to enter and escape for the purpose of ventilating rooms, is proved by its frequent and increasing adoption. Sheets of perforated zinc may be obtained from 6d. upwards, and chimney valves from 4s. to 5s. Where appearance is an object, glass perforated with circular holes or slits may be employed instead of zinc, and chimney-valves are made of a very ornamental character.

"Cold air, it may be added, should never be admitted under the doors or at the bottom of a room, unless it be close to the fire or stove, otherwise it flows along the floor towards the fire-place, leaving the upper foul air unchanged, and cooling most unpleasantly and injuriously the feet and legs, which are most susceptible of injury by cold."

NAMES OF PLANTS (Inquisitor).—The only Fern which reached us was a piece of the Common *Polypodium vulgare*. The *Davallia canariensis* is one of the Hare's Foot Ferns. (*Rev. R. M. E.*)—Yours is the *Aloe variegata*, or Partridge-breast Aloe. Our correspondent says "it was out-of-doors the whole winter near Cloyne, in Ireland, it being only covered with a hand-light during severe days, and it is now in bloom. *Eccremocarpus* is hardy there, and bore the frost very well, as did *Gazania rigens*; but *Lophospermum* was killed." (*W. Ledger*).—We think *Doronicum caucasicum*. (*Carig Cathol*).—We believe your bit of *Myosotis* to be the *M. caespitosa*, which is so much like the *palustris*, but *caespitosa* is considered a biennial, and *palustris* a perennial. We see nothing wrong with respect to your Scarlet Geranium; plants often exhibit a little sickly appearance until they become established, either from too much wet, cutting winds, or some other too great change.

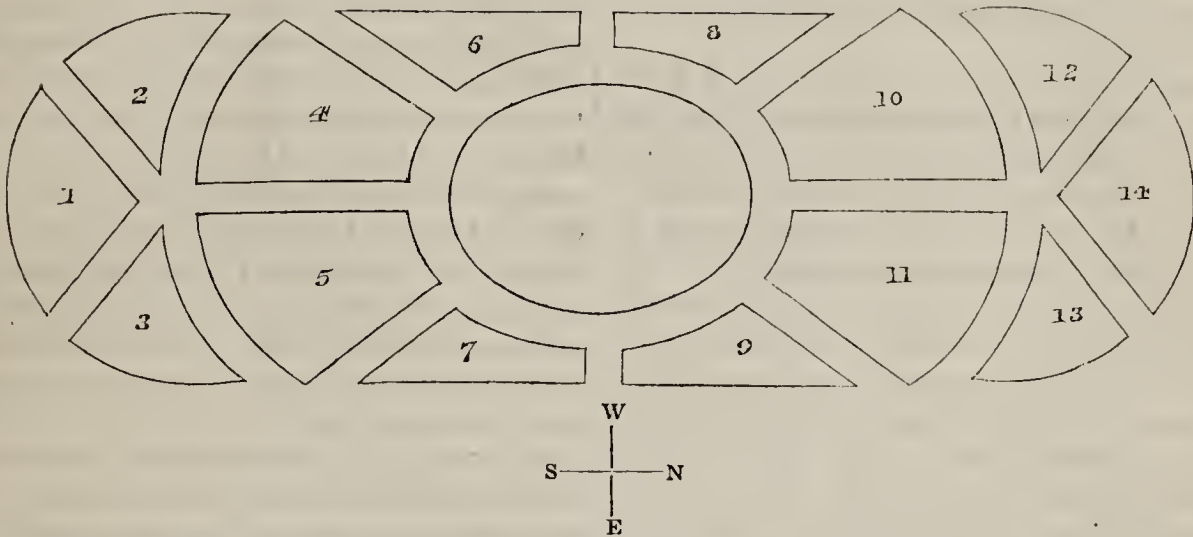
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WEEKLY CALENDAR.

M D	W D	JULY 21—27, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
21	Th	Sun's declination, 20° 25' N.	29.973 — 29.942	77—51	S.W.	—	10 a. 4	2 a. 8	9 a. 15	15	6 3	202
22	F	Black Hair-Streak; woods.	30.128 — 29.971	78—54	W.	—	11	1	9 41	16	6 6	203
23	S	Large Copper; Camb. fens.	30.138 — 30.052	79—52	E.	—	12	0	10 2	17	6 8	204
24	SUN	9 SUNDAY AFTER TRINITY.	29.951 — 29.842	78—57	E.	—	14	VII	10 20	18	6 9	205
25	M	ST. JAMES. DS. CAMB. B. 1797.	29.733 — 29.656	74—58	W.	35	15	57	10 35	19	6 10	206
26	Tu	Smoky Wainscot.	29.708 — 29.640	77—59	S.W.	10	17	56	10 50	20	6 11	207
27	W	Small Ranunculus; gardens.	29.993 — 29.862	79—52	E.	—	18	54	11 6	21	6 10	208

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 73.3° and 52.8° respectively. The greatest heat, 92°, occurred on the 25th in 1844; and the lowest cold, 40°, on the 21st in 1851. During the period 111 days were fine, and on 71 rain fell.

FLOWER-GARDEN PLANS.—No. 7.



THE beds are proposed by "Anemone," their young designer, to be filled as follows:—
The oval centre bed with *Roses*; *Geant des Batailles* being in the middle, encircled by *Duchess of Sutherland*, and outside this *Mrs. Bosanquet*.

- 1 White Verbena.

2 Beauty Supreme, Verbena.

3 Scarlet Verbena.

4 Scarlet Geranium, edged with *Plumbago Larpentæ*.

5 Heliotrope, edged with Ivy-leaved Geranium.

6 White Petunia.

7 St. Margaret, Verbena.
- 8 Emma Verbena.

9 Nierembergia gracilis.

10 Yellow Calceolaria, edged with a bronze Calceolaria.

11 Scarlet Geranium, edged with White Verbena.

12 Scarlet Verbena.

13 Convolvulus minor.

14 Grey Verbena.

The walks between the beds are gravel, three feet wide, and edged with Box.
Here is a very useful figure for a flower-garden, with the names of the flowers planted in it by "Anemone," a young beginner. The *Rose* bed in the centre will be very gay, if the centre of it is raised considerably above the sides, so that the *Duchess of Sutherland* does not overtop *Geant des*

Batailles. Bed No. 10 would do with *Calceolaria Amplexicaulis*, and *Sultan* would make more contrast for a border than the Bronze Calceolaria. The Grey Verbena for 14 ought to be *Duchess de Nemours*. *Plumbago Larpentæ* will not make a good flowering edge for 4; *Mangle's Variegated Geranium* would be better, and 8 would look better if it were exchanged with 6, as *Emma* is dark, and 10 having a dark border next to it, because this style of planting in masses is a mixed style, and all the beds, therefore, ought to show as much contrast as possible. To balance 3 with 2, or 12, the only two legitimate ways, 3 ought to be planted with *Robinson's Defiance*; the only difficulty will be in 6, the *White Petunia*, which is too high for the size of the bed. 6, 7, 8, and 9 ought to be as nearly as possible of equal height. One great advantage of this style, however, is that all the beds may be planted differently every year, except the centre one, so as to have a change of soil for the different plants without altering the fundamental arrangement. Add to this, that "Anemone" has had no more experience than she derived from reading THE COTTAGE GARDENER, and the result is very satisfactory; besides, the whole figure is well worth imitating, where the space is suitable. D. BEATON.

WE had directed our attention to *Melon culture* before Mr. Robson had commenced his series of papers. Much that we had noted would be very like an echo of the sound principles of practice he has enunciated, and yet, as meeting the circumstances of many amateurs, with limited room, who really love a good Melon, and wish to appropriate the glass case that furnished them with Early Cucumbers to the obtaining of Melons in September and the first days of October, we can hardly refrain, were it only to furnish corroborative evidence, from alluding to a few minutiae that we have found of great importance in Melon culture at all times, and especially for obtaining good late fruit.

Soil.—This should be rather light when the plants are turned out to encourage growth, but the mass of the soil should be poor, and approaching a clayey loam, that the growth may be robust instead of luxuriant. In rich, light soil, late Melons will throw up foliage too gross; and damp, ungenial weather will soon show its effects upon them, in gangrene, rotting, and other diseases. It is much better to increase luxuriance, when necessary, with manure waterings. The soil should not be less than fifteen inches deep; if nearer two feet all the better.
Trellis for Training.—This is desirable both for early and late work, and one advantage is that you can fix it

at any suitable distance from the glass. We have had very nice ones made of pieces of wood one inch square, four longitudinal ones for the size of a light, and two end ones, and then the whole spaces thrown into small squares, by taking tarred small cord across from one longitudinal piece to another. We prefer all such trellissing to be in pieces of the size of *one* light, as then the whole arrangement is easily changed, according to the crops required. The trellis is a safeguard against damping, and, when insects appear, the smoke of tobacco, and the syringe, tell more decidedly upon them. About fifteen inches from the glass, and from that to twenty, will be most suitable at this season. Where there is no trellis, the fruit must be carefully supported above the ground.

Watering.—After growth has commenced, the less water that will keep the plants in health the better will be the fruit. Little should find its way to the surface of the bed, even with a trellis, after the first of September. Without a trellis, the necessary waterings should be given by pouring the liquid into holes, and thus keeping the surface soil dry. After the beginning of August avoid putting any within six inches of the main stem. In fine days, however, the plants and fruit will be benefited with just a slight dewing over the foliage from a fine syringe, shutting up early in an afternoon, and giving a little air again in the evening.

Air giving, Shading, and Temperature.—If air is not left on all night it should be given early in the morning. Too much must not be given during the day, as a high flavour greatly depends upon a high temperature and a dry atmosphere. When growing, keep the atmosphere moist; as the fruit approaches maturity, let it become dryish. The more sun the plants will stand, the better, other things being equal, will be the flavour of the fruit. No shading should be given, therefore, unless during sudden extremes of weather, from dull to bright. Melons that require shading every sunny day, in August for instance, might just as well be cut green, and used in place of Cucumbers. We have had good autumn fruit with a bottom-heat ranging from 70° to 75°, and 80°; an atmospheric night temperature of from 60° to 65°; and a day temperature ranging from 65° in the morning to 90° and 95° at noon. Under such circumstances, the foliage becomes as stiff, but also more brittle than glass, as the least touch in a careless way will break and disfigure the best of the leaves.

Stopping, Training, Setting, &c.—These, though mentioned last, will be the matters first demanding attention; and, perhaps, no points in Melon culture are more important. The whole of the treatment we would recommend here is based chiefly on two facts; the first, that a few healthy, largish leaves, exercise a more beneficial elaborating power than a similar space occupied with younger and smaller foliage. The second is, that the Melon, in no stage of its growth, endures the prunings and loppings that a Cucumber may be subjected to with advantage. This points out the propriety of stopping and picking out buds with the point of a

penknife, or the thumb and finger, instead of having to lop branches away with a pruning-knife. Success will greatly depend in preventing, rather than removing, useless growth.

Keeping in view, then, that a young Melon plant, properly supported, would grow as upright as a Spruce Fir, and that from the axil of every leaf on that young stem would come a side-shoot, on the laterals of which side-shoots fruit is generally formed, we are furnished with the guide as to the time and modes of stopping. Thus, when we wish a plant to fill a light, we do not stop the plant until it has made some five or six joints, so that we may have as many leading stems trained along the ground. If we have two or three plants in a light, two or three stems from each plant will be sufficient, and the others must be pinched out when they show themselves peeping from the axils of the leaves. The same rule holds good when the plants are to be trained to a trellis; only here, as the soil may be one or two feet beneath the trellis, the young plant should be trained to the requisite height without stopping, and every bud below that height should be picked out with the point of a penknife, and care should then be taken, that, in nipping out the point of the shoot, as many small leaves should be left with the bud in their axils untouched, as you wish for main shoots to train across the allotted space. As soon as these shoots are from six to twelve inches in length, they should be fastened to the ground with pegs, or to the trellis with string; and here the same disbudding process must go on again, picking out each bud from the axils of the leaves as the shoots advance, until the shoots get to within a foot or so of their allotted space, when the points of them are nipped out, leaving three or four joints with the buds untouched. From these buds lateral shoots will spring, most of which will show fruit at the first joint, and a few at the second, and some fewer may not show at all. As soon as the fruit shows, stop the lateral shoot one joint above the fruit, or close to the fruit, for we never found that either mode had any advantage over the other.

By this system it will be perceived that disbudding takes the place of cutting and pruning; that the main shoots obtain an equal start to secure something like equality of growth; that most of the lateral shoots show fruit about the same time; that thus the fruit on a plant set and begin to swell as nearly as possible contemporaneously, a matter of much importance in Melon growing, as, if one fruit gets the start very much of the rest, it will, ultimately, be too apt to drain all the resources of the plant to itself, to the starvation of its younger sisters.

We thought of altogether passing over the "setting," or fecundating process, but we can never forget the fact of an old jobbing gardener, who had served an apprenticeship, and lived under some notable gardeners, asking us to explain the difference between the male and female flowers, and the *how's*, *why's*, and *what's* about the fecundating process. Now, this may meet the eye of a few quite as ignorant. Well, the

Melon and the Cucumber have the peculiarity of having distinct male and female flowers; the female is always known by having the embryo fruit behind it. Unless when seed is wanted, it is of no consequence fecundating a Cucumber; nay, when fine long fruit are wanted we have found the object best secured by tying up the female flower, and thus preventing fecundation. But we have seldom or never known a case of a Melon swelling freely, and arriving at full maturity, that did not contain fecundated seeds. Hence the importance of the process in their case, which is thus effected:—On the same or the following day that a female blossom opens, and the blossom is dry, and the stigmas in the centre present a moistish appearance, take off a male blossom, known at once from what we have said of its opposite, and if you observe that the yellow dust or pollen will scatter freely from the stamens, hold it upright, pick off the yellow “flower,” or corolla, and then, reversing it, gently touch the centre, or stigma, of the female flower, and leave it there. Even with all this care, fecundation, and the consequent free swelling of the fruit, will frequently not take place. There is a little secret here we have often tried with success, and as such we freely surrender it to the denizens of THE COTTAGE GARDENER. If the Melons are growing on the ground the female blossom will generally look up to the light. After inserting the male flower, as described, draw the female corolla over it, bring its edges down to a piece of tile or stone, and, when once there, place another piece on their points, so as to keep them there. If grown on a trellis, go through the operation in a similar manner, but after bringing the points of the petals together tie them there with a string, and then from this string suspend a weight of from an ounce to a quarter-of-a-pound. It is amazing what a weight these petals will thus carry without being drawn off. The object, in both cases, is to retain more nourishment to the fruit by checking the return of the sap. We have practised the same mode for causing early Cucumbers to swell fast for more than twenty years. F.

Our readers will remember that in connection with the *Birmingham Poultry Show* we have long and unflinchingly advocated as two amendments, that the show shall be kept open for a less number of days than at present; and that no dealer in poultry shall be employed as a judge. As evidences that these two recommendations are sound, we publish two documents, every signature to which we claim as a sustaining witness.

One memorial to the Committee of the Birmingham Exhibition was as follows:—“We, the undersigned, being Breeders and Exhibitors of Domestic Poultry, are convinced that the practice of appointing dealers (that is to say, persons who buy and sell exclusively for profit or gain) as judges at public shows, must materially tend to diminish the public confidence, and will eventually defeat the object for which such exhibitions were instituted; and feeling the necessity of taking some steps for the prevention of the evil complained of, hereby

pledge ourselves to use every exertion to prevent such objectionable appointments being continued.”

T. Sturgeon, Esq., Manor House, Grays, Essex
G. C. Atkins, Esq., Edgbaston, Birmingham
J. Cattell, Esq., Moseley, Birmingham
E. Bond, Esq., Leeds
E. George, Esq., Coulsdon, Surrey
W. Van Wart, Esq., Selley Grove, Northfield
C. S. Floyd, Esq., Holmfirth, Yorkshire
V. W. Blake, Esq., Old Square, Birmingham
W. A. Lyndon, Esq., Moseley, Birmingham
T. B. Stead, Esq., Leeds
Mr. J. Bissell, Moseley, Birmingham
Mr. J. T. Wilson, Redditch, Worcestershire
Mr. Y. R. Graham, Yardley, ditto
Mr. W. Anderton, Sparkbrook, ditto
Mr. H. Wildman, Birmingham
Mr. G. Lowe, Birmingham
Mr. J. Hardwick, Birmingham
Mr. G. Graham, Yardley
Mr. E. Lowe, Comberford Mill
Mr. R. Cox, Highfield, Edgbaston
Mr. G. Newark, Coventry
Mr. W. H. Smith, Handsworth
Mr. E. A. Lingard, Birmingham

Mr. W. Sutton, Handsworth
Mr. J. B. Winder, Birmingham
Mr. H. Parker, Church Lane, Handsworth
Mr. T. Smith, Cheapside, Birmingham
Mr. R. Glover, Holt Hall, Fazeley
Mr. J. Gough, Birmingham
Mr. W. Cheatle, Slateley, Fazeley
Mr. T. Lowe, Whateley, Fazeley
Mr. W. Parkes, Birmingham
Mr. J. H. Parkes, Highgate, Birmingham
Mr. J. Warden, Jun., Green Lanes, Birmingham
Mr. E. Farmer, Greet
Mr. G. Oldham, Nether Whitacre
Mr. J. Oldham, Long Eaton
Mr. J. Avery, King's Norton
Mr. F. Cheatle, Dosthill, Fazeley
Mr. J. Huskins, Wilnecote
Mr. J. Ball, Glasscots, Tamworth
Mr. G. Wheeler, Southampton
Mr. T. P. Edwards, Lyndhurst, Hants
Mr. J. Tye, Handsworth
Mr. Amphlet, Walsall
Mr. Westwood, Walsall
Mr. Blackham, Handsworth
Mr. Lawton, York
Mr. J. W. Ward, Repton, Derbyshire

The Memorial to the Committee of the Birmingham Exhibition, requesting that the show days may be fewer in number, was signed by the following gentlemen:—

Henry Gilbert, Kensington
Charles Punchard, Blunts' Hall, Haverhill
Thomas Sturgeon, Manor House, Grays, Essex
Captain Hornby, Knowsley, Prescott, Lancashire
John H. Peck, Wigan
John Fairlie, Cheveley Park, Newmarket
Wm. Thos. Squire, Barton Place
John H. Sams, Clare, Suffolk
J. Dutton, Bury St. Edmunds
Elizabeth Watts, Monk Barns, Hampstead
Wm. Griggs, Holloway
John Eason, Lower Norwood
Samuel Moody, Droxford
Thomas Atkins, Babbicombe, Torquay
Wm. John Beeby, Chaldon
Thomas Bridges, Croydon
E. George, Chaldon
Harrison Weir, Peckham
John Cook, Homerton, London
Wm. W. Wingfield, Gulval, Penzance
Rich. Healey Bowman, ditto
Wm. Cudlip Pennington, ditto

Wm. J. Lawrence, ditto
Alfred Blee, ditto
P. Grenfell, Gulval
E. Bond, Middleton, Leeds
Titus Bennett, Stead, Leeds
John Henton, St. John's Cottage, Leeds
Geo. Lawton, York
T. H. Travis, ditto
Grace Strong, ditto
R. Hoggard, Clifton, York
John Hill Smith, ditto
C. S. Floyd, Sands, Holmfirth
Joseph Brook, Huddersfield
Thos. J. Wrigney, St. George's Square, Huddersfield
W. H. Snell, Shirley Cottage, Norwood
H. Mills, Sparham, Enfield, Middlesex
John Bidwell, Guildford
T. H. Fox, 44, Skinner-st.
H. W. Collinson, 47, Castle-st., Southwark
Thos. H. Potts, Kingswood Lodge, Croydon
James Henry Catling, Kings-st., Baker-st.
Casteels Cooper, Guildford, Surrey
James Buckley, Llanelly, Carmarthenshire

Henry Herbert, Powick, Worcester
 John Herbert, Leigh Parsonage, near Reigal
 James Leighton, 183, High-st., Cheltenham

Thos. Jas. Cottle, Pulteney Villa, Cheltenham
 W. H. Holcombe, Campden, Gloucestershire
 George Cooper, Ward End, Birmingham

To this Memorial the following reply has been received:—

“TO CHAS. PUNCHARD, ESQ., HAVERHILL.

“*Birmingham, June 25th, 1853.*

“Dear Sir,—I beg to acknowledge the receipt of your favour of the 13th instant, enclosing a memorial on the subject of the time during which the Birmingham Exhibition of Poultry is kept open, and I have taken the earliest opportunity of submitting the same to the General Purposes Committee of the Council.

“I am instructed in reply to inform you that it is quite impossible that any change can be made in the regulations to which the Memorialists refer. In order to carry on the exhibition efficiently, and to accomplish all the council have in view, it is absolutely necessary that they should have large funds at their disposal. It is now purposed to add a new compartment to Bingley Hall, which shall be used solely for the poultry show, and this addition will involve considerable expense in new and improved fittings; the council have moreover increased the amounts offered for prizes in the several departments of their exhibition, the prizes for poultry this year exceeding those awarded in December last, by about £80.

“You will thus perceive that the council cannot consent to any alterations which would lead to a diminution of the society's revenue. (The private view which takes place on Tuesday, produced last year no less than £427, exclusive of subscriptions; and many of the subscribers only visited Bingley Hall on that day.)

“Were the proposition of the memorialists to be adopted, the amount named would be almost entirely lost, and the subscription list seriously diminished: while it is found that the four days are scarcely sufficient to enable all who are interested in the exhibition to make a careful examination of the specimens.

“At the same time, the council are most anxious to take every possible care of the fowls sent to the show, and to adopt the best modes of feeding, and managing them, while in confinement. A committee was appointed so early as the 27th of January last, ‘To ascertain if any and what alterations can be made in the arrangement of the pens, so as to facilitate the inspection of the specimens by the visitors; to decide upon the best mode of conducting the sales; to engage a poultry salesman, and other assistants; and to make such regulations with regard to feeding and the kinds of food which are to be used, as shall, in their opinion, be calculated to insure the preservation in good health of the birds sent for exhibition.’

“This committee will be glad to receive and consider any suggestions which you, or your friends, may be prepared to make; and I believe it is their intention to perfect such arrangements as will enable them to send off the fowls on Friday night, or early on Saturday, so

that they may be received by their owners on the latter day.

“From inquiries which have already been made, there is no reason to suppose that birds which are sent to the show in good health will suffer any material injury.

“Should it be your intention and that of the other subscribers to publish the memorial, I am instructed to request that the same publicity may be given to this letter.

“I am, &c.

“JOHN MORGAN, Jun., Sec.”

As the proceedings of the *London Entomological Society* often possess considerable interest both to agriculturists and horticulturists, independently of their general claim to notice as connected with the most numerous, ubiquitous, and, in many respects, singular tribes of animals, we have resolved to give Reports of the Meetings of this Society in our columns, trusting that by that means the attention of many of our readers may be directed to the subject, and that some of them, at least, may be induced to add to their previous pursuits that of the examination of the insect tribes with which they are so extensively surrounded. It is not for us, in this place, to write an encomium upon the study of Entomology, because our pages have, from time to time, sufficiently proved the deep interest with which the subject is capable of being invested when a proper direction is given to the mode of study, and when, instead of getting together a case full of dried specimens of, it may indeed be true, very beautiful butterflies, moths, or beetles, the attention is directed to the investigation of their habits, the examination of their economy, or the elucidation of their natural relations with each other, or with the world around.

The Entomological Society has now been established nearly twenty years. It is not of great extent as regards the number of its members, but this is amply made up by their activity. It holds its meetings on the first Monday of every month throughout the year; it possesses an excellent collection of insects, both British and Exotic, as well as an excellent library; and it publishes its Transactions quarterly, consisting of the Memoirs read at the meetings, generally illustrated with coloured plates. The President holds his seat for two years consecutively, and among the past Presidents are Messrs. Spence, F.R.S.; W. W. Saunders, F.R.S.; G. R. Waterhouse; and J. O. Westwood. The present President is Mr. Newman, author of various works on Entomology, as well as upon British Ferns, and Editor of the “Zoologist,” and “Botanist.”

The meeting for July was held on the 4th instant, at the Society's new apartments in Bedford Row, with the President in the chair. A number of Entomological works, presented since the last meeting, were upon the table, and a great number of rare insects, recently captured, were exhibited by different members. Amongst these was a box filled with rarities, both of *Coleoptera* (Beetles) and *Lepidoptera* (Butterflies and Moths), collected in Perthshire by Mr. Foxcroft, and intended for

distribution amongst the subscribers to his excursion, he having for several years past made similar journies on that plan. Last year, however, the weather proved so unfavourable that the subscribers did not receive so many novelties as had been expected, but they will be amply remunerated this season. Amongst the Beetles are numbers of the rare *Lycus aurora*, *Lamia ædilis*, *Boletothorus crenatus*, *Pytho depressus*, &c.

Mr. Jansen exhibited various rare *Coleoptera*, captured on the 25th ultimo, in the neighbourhood of Mickleham, during the first annual excursions of the Society. Unfortunately the weather was very adverse to the pursuits of the Entomologist on that occasion, but still several very rare species were collected, such as *Claviger testaceus* (the Blind Beetle, found in Ants' nests), the little *Sphærosoma quercus*, *Pachetria leucophæa*, &c.

Of other rare species exhibited may be mentioned *Notodonta trepida*, captured at Highgate by Mr. Tebbs, it having been attracted to a light after dusk; *Aptota palpella*, reared by Mr. Weir, from larvæ on the *Genista tinctoria*; the caterpillar and chrysalis of the White Admiral Butterfly, *Limenitis sybilla*, which feeds on the Honeysuckle, by Mr. Hunter; *Hydrella caliginosa*, from the New Forest, by Mr. F. Bond; a bred specimen of the splendid *Noctua Delphinii*, by Mr. S. Stevens, as well as *Plinthus caliginosus*—the latter from Wickham; several living *Mole Crickets*, by Mr. Waring,—six had been placed in the box during the day preceding, but only two remained, four having been devoured by their voracious companions; a specimen of *Cucullia umbratica*, with a bundle of the pollen of some plant attached to its head, by Mr. Carter; *Aphelia pratana*, a small moth, infested by a thread-like worm (*Gordius* sp.), which had protruded a considerable distance out from the extremity of its body; and the rare *Laverna setra-cella*, of Curtis, reared from caterpillars which fed upon *Epilobium hirsutum*, by Mr. Douglas, who also exhibited specimens of a species of *Bruchus*, in all its states, which has recently done much damage in the London Docks, by feeding on mace, the larvæ eating out the interior, and leaving the skin entire. Mr. Edwin Shepherd exhibited *Madopa salicalis*, and *Ketinia Turionana*, from Darenth.

A note from Professor Hagen, the German entomologist, addressed to Mr. Staunton, was read, on the insects figured in Hill's "Decade of Curious Insects," published in 1773, and which had been stated by Fabricius to be entirely fictitious, but which the professor considered, although extremely rude, might be recognised. Two of them were evidently intended for species of *Thrips* (Linn.), and one was the more remarkable as the specimens were said to have been ejected from the nostrils of a person who had been suffering considerable pain for some time previously. It was stated, further, that some flowers of Mignonette were also in the room, and it seems evident enough that the person in question had been smelling at the flowers, which are often greatly infested with these little Thripsidæ.

Mr. Samuel Stevens mentioned a circumstance which

he had recently observed whilst collecting moths, which is likely to prove of much benefit to the moth collector. Having sugared the trunks of various trees, in the usual manner for enticing moths, he had noticed that, instead of greedily frequenting the sugar, they assembled in great numbers on a thistle growing near, which Mr. Stevens found to be greatly infested with aphides, the saccharine secretion from which (so much prized by the ants) had proved a greater attraction than the sugar. Honey dew, so eagerly sought after by the honey bees, was also the same secretion; and a French entomologist has discovered that there is no better plan for enticing moths than to hang festoons of string, or rope, in gardens, daubed over with honey water.

A note addressed to Mr. Westwood was read from Mr. Lowell, Her Majesty's Inspector of Small Arms, on the ravages of a small beetle on walnut-wood gunstocks kept in store in the Ordnance Depôts, and requesting information and advice on the subject. Some of the beetles had been forwarded to Mr. Westwood, which proved to be *Latridius porcatus*. As the habits ascribed to this insect by Mr. Lowell differed materially from those recorded concerning it by De Geer and others, further information was needed on the subject.

Mr. Westwood also exhibited a beautiful little Moth, *Xamproma corticella*, which he had reared from a small scarlet larva, which, in the spring, does much injury to the young shoots and buds of the *Raspberry* by gnawing away the interior, and so causing the shoot to wither; also specimens of *Hylobius abietus*, a large Weevil, ordinarily found on Fir trees, but which had this year done much injury in Scotland by gnawing the leaves and shoots of *Plums* and *Peaches*; *Astyages Luscini-pennella*, a little Moth reared from a case-bearing Caterpillar, which infests *Roses*, and the chrysalis of the *Swallow-tailed Moth*, of which he described the peculiar structure overlooked by Curtis and Hubner.

It was announced that the next field-day of the Society would take place on the 9th July, at West Wickham and Addington.

THE prices for *Shanghai Fowls* continue as high as heretofore. One cockerel, brother to Captain Snell's prize chickens, sold, at Mr. Stevens' Auction Rooms, on the 5th instant, for £10, and a pullet of the same breed, hatched April 15th, sold for £9. Some of the stock of the Rev. J. G. Hodgson, of Croydon, fetched excellent prices at the same sale. One very light buff cock, hatched in August, 1852, and which took a first prize at the West Kent Poultry Show, sold for £5 10s., and a light hen, which shared in that prize, and in first prizes, at Bristol and the Great Metropolitan Exhibitions, sold for £9 10s. A buff pullet, belonging to J. R. Rodbard, Esq., Aldwick Court, Wrington, near Bristol, and a winner of the second prize at the Plymouth Show, realized £11. There were 175 lots, and they were sold for a total of £280.

THE wet weather during the beginning of the month has been very unfavourable to the *Potatoes* in the southern districts. The murrain symptom has made its appearance upon the leaves in many districts of Hampshire, and the following is an extract from a letter received from the neighbourhood of Penzance, in Cornwall:—"The disease is spreading rapidly among the *Potatoes*. At Helston (mentioned by us as yet safe a fortnight since), they are still healthy; but here (Gulval), we are a month or six weeks in advance of them, which accounts for the difference. From Gulval the earliest *Potatoes* and earliest *Brocoli* reach Covent Garden Market."

A correspondent writing from Ashburton, July 10th, says:—"Potatoes here are looking remarkably well, and not the least sign of the murrain at present; but we have had very strong winds on the 28th, 29th, and 30th of June, so that in very exposed places the stalks were broken off just as if they were cut off. The allotment *Potatoes* here are looking splendidly. They have taken some of them up, and they are very fine, and selling at 1½d. per pound. We have an abundance of *Gooseberries*, three quarts for 5d.; and *Currants* are very plentiful. Some of the early *Apples* are rather scarce, but the orchard *Apples* are very abundant. *Pears* are very fine; the *Cholwell* Pear, especially, is numerous. It is the sort that the late Dr. Soper sent to the London Horticultural Society. I think that it is a sort very little known, but if any one would like a bud or graft I will send it to them from the same tree as that of the Horticultural Society. Of most other fruits there are a very fair crop.

"Our allotments contain forty land yards each—sixteen of them are at a rent of £1 5s. 6d. each, free from rates or taxes.

"Of *Bees* we have had very few swarms. The earliest about here was on or about the 15th of May. That swarm has swarmed again, and they are expecting that swarm to swarm again. We had a swarm on the 7th of July; and I think that, in general, they have not swarmed yet, the weather has been so very unfavourable for them."

The *Cholwell* Pear mentioned by our correspondent is thus described in 1845, by Mr. R. Thompson, one of our best authorities, in the *Horticultural Society's Journal*.

"The fruit is about three inches in length, and one and nine-tenths in diameter, at the widest part of the section, which is about two-thirds of its length from the stalk. The form is curved pyramidal. Eye small, but open. Stalk from half to three-quarters of an inch in length, slender and obliquely attached. Skin smooth, thin, yellowish-green on the shaded side; faintly tinged and obscurely streaked with dull red next the sun, where it is also sprinkled with pale dots. The flesh is yellowish-white, melting, buttery, very sugary, and rich, with a musky flavour resembling that of the *Seckel*, or *Henri Quatre*; on the whole it most resembles the latter, but the skin is thinner and smoother, and the eye is not so much plaited. The end of September or beginning of October appears to be the period of its maturity. It will succeed as a standard, and is a good early pear worthy of cultivation, especially as it will fill up a blank which occurs in the supply at the time it becomes fit."

Mr. Errington, writing from Cheshire, on the 13th instant, says—

"In all my experience I have never known such a deluge of rain as we have had for the last ten days or so: we are enveloped in a sheet of mud.

"The *Potato disease* has begun to a certainty.

"*Cucumber disease* is here also very virulent.

"We shall shortly hear accounts of *Grapes shanking*, and no marvel."

At the Swaffham Poultry Exhibition, H. Gilbert, Esq., of Kensington, had both the prizes awarded to him in the Shanghai Chicken Class, being for the best pen in that Class, and for the best pen of Chickens at the Show.

WE have the following from Sydney, in New South Wales. Mr. Creswick's father is a nurseryman at Kintbury, in Berkshire.

"There is at present in full flower, in the hothouse of T. Woolley, Esq., at the Glebe, a very beautiful specimen of the newly-discovered and rare *Water Lily*, the *Nymphaea gigantea*. It is believed to be the only cultivated specimen in existence. A dried specimen was sent to England a short time ago, and created a great sensation in the botanical world of London. The flower, which is a rich rose colour, is about eight inches across when fully expanded, springs from a stalk about three feet long. The leaves are peltated, and about ten inches in diameter, having the stalk in the centre, as is common in the *Nymphaeae*. This beautiful plant is believed to be a native of this continent, and perhaps ranks next in beauty to that wonderful specimen of God's handiwork the *Victoria Regia*. There are some more buds upon the plant, and Mr. Woolley has kindly thrown it open to the inspection of the curious, on application to his gardener, Mr. Creswick. In the beautiful grounds attached to his residence there is also a small, and, we believe, a unique specimen in Sydney, of the *Bunga Bunga*, a native of Wide Bay. It is a healthy young plant, and somewhat resembles the *Araucaria imbricata*, but we believe its timber is not valuable, although it forms an ornamental tree."

SEA-KALE.—No. 3.

I FEEL that the remarks on Sea-kale, made at page 257, are incomplete without a little addition, and that chiefly about the cultural process out-doors; for, as before observed, no forcing process can cause bad crowns to produce good Kale. Deep digging or trenching should, in all cases, be practised; and if the ground is naturally shallow, a special course of culture should be had recourse to, which I will presently describe. I consider thirty inches in depth indispensable to the production of first-rate crowns, though I do not say that good cannot be obtained without this depth. My recent practice is to manure the ground heavily with old hotbed material, of which one-half, at least—generally three-parts—are tree leaves. I spoke, in a former paper, of old celery-beds, in the Scotch fashion, being

extremely eligible; of course, if such are selected no manuring will be requisite,—a good salting, the salt well-incorporated some weeks before planting-time, will alone be necessary. In ordinary cases, the manure is chopped to pieces out of the old beds with a sharp spade: this plan I practice with all such manure before it is filled in the barrows, as it is double labour on the ground, and is not half so well performed. Before chopping for the Sea-kale, however, a thick coating of salt is spread over the manure to be chopped, and this in order that it may blend thoroughly with the manure, affording a ready means of dividing the particles of salt, over which much care should be taken, as it is by far too powerful unless thus separated. The manure is spread on the ground about three inches in thickness; and before trenching another thin sprinkling of salt is given. Our readers, even those who are not old gardeners, must know that the Sea-kale is a marine plant, thriving in the saline sands and alluvium of the ocean; this will readily account, in their minds, for such a liberal application of salt.

As to the trenching, I must here protest, on general grounds, against the too common practice of spreading the manure, and then paring, as it is called, the manure in a thick coating into the bottom of the trench. Here we have a stratum of manurial matters buried, and it is, of course, months before three-fourths of the roots of almost any crop can reach the nourishing mass. My general practice in trenching—the surface-soil being a little over two feet in depth—is to trench three spits, which may be said to average eight inches each. The operator chops out his parallel lines for the trenches, at one yard apart, after the manure is spread. The first yard, or commencement of the trenching, is then, of course, wheeled out to the other end, and he commences by digging one spit (no paring) into the bottom of the trench; a little manure is then spread over the surface before the second spit is taken, when it, in turn with its manure, is dug down. The last is generally dug up without manure, but it is dug a little shallower—say six inches—and this is in part subsoil, which, with us, is about intermediate between red sand and clay, rather adhesive, whilst the surface-soil can scarcely cohere. The bringing-up this subsoil about every three or four years we find of the utmost benefit to the crops, doubtless from placing fresh inorganic materials within reach of the roots.

Thus, then, is the Sea-kale ground prepared; and now I must stay a moment to show the position of the young roots about to be planted. These are sown in drills every spring, about the end of March, and thinned-out to about three inches apart; the drills, if parallel, being about fifteen inches asunder. Good soil and clean culture are all that is requisite the first season; and by the approach of winter they are nice little crowns, with roots a foot or more in length. Now, it is a well-known fact, that you may propagate Kale abundantly with less trouble than this; but I have so frequently found it to canker when propagated from sections of the old roots, that I found it expedient, years since, to adopt the seedling plan. It is also well-known, that if a lot of old Sea-kale roots are chopped to pieces, and the pieces inserted in soil, almost every section will grow. Seedlings, then, as above, I find make a much safer stock; and these trenched out in the end of February, which is my planting period, are used.

The ground is marked out in lines, or drills are drawn, at three feet apart, and the crowns are planted in pairs instead of singly, the centre of each pair being about thirty inches distant, and the pair within four inches of each other on either side such centres. Now, this may seem a good deal of room to those unaccustomed to the production of fine crowns, but it is certain that inferior crowns, which must be the result from a

crowding system, can never pay so well, nor give such a degree of satisfaction.

Having alluded, in my former paper, to the pinching away the blossoms, and the thinning-out of the shoots on the crowns, I may pass on, merely observing, that it is seldom they produce too many shoots the year of planting. We generally have a surplus of roots, however, and, consequently, have a row or two of roots in hand which have stood a second year. The gist of the plan, nevertheless, is to produce first-rate crowns at two years of age; that is to say, Kale sown last March, and transplanted next March, will be in first-rate order for forcing in November twelvemonth. As a market speculation, indeed, it would not prove sufficiently remunerative if it stood longer.

With regard to the latter view of the question, it is quite obvious that our market gardeners are not so famous in the production of this delicious esculent as in most of their other productions, or forced Sea-Kale would be within reach of the middle classes of society, which it cannot be said to be in January or February at present. Not every tradesman, for instance, will choose to give half-a-crown for a dish of Kale, and there is really no reason why good Kale should not be obtainable at one shilling the dish at such periods. I will endeavour some day to show how this could be effected as a mercantile affair; for to accomplish this would require a mode of procedure somewhat different from the ordinary gardener: not, however, in principle, but in the relation which the mode of forcing should bear to the rest of the system.

And now I may just advert to the best mode of producing good Kale from those crowns which remain a surplus after the forcing stock has been amply supplied. When we reach the end of March, it is time to think of bringing the forcing of Kale to a close; and between that period and the advent of Asparagus, good Kale is still wanted, and this must mainly be supplied from the open ground. As I before observed, I always take care to have a surplus of roots, and having, by a calculation based on experience, secured an ample stock of roots “heeled” in November, I am in a position to know what to do with the remainder.

Old tan is a material of which we have always had a heap to spare, and this I have ever found a capital blanching material for the open ground Sea-kale. There is little doubt, however, that fine cinder ashes, after they have been weathered, and their caustic powers reduced, would be as good a material, and, indeed, any ordinary light soil; the chief conditions requisite being that the material should be in a reduced state—no cohesion between the particles of it.

I cover all my surplus crowns in November, or as soon as the foliage after natural decay has been cleared away. And why so soon, it may be asked? Why, in order to prevent any severe depression in the ground-heat, which the departed summer has left behind. If any one doubt the importance of this little point, let him try, in the ensuing winter, two portions on exactly opposite principles; the one portion of Kale roots covered the moment the foliage can be honestly dispensed with; the other left alone until the ground is hard frozen; then let him note which will sprout first in the ensuing spring.

However, the thing is so obvious, that it need scarcely raise a doubt; and I name it here in order to show that even our commercial gardeners, with whom early produce at a minimum amount of labour is of much import, may possibly have something yet to learn, or at least to consider carefully. The old tan then is wheeled to the crowns, and heaped over them in a conical form; and as each of my kale patches—originally two crowns, but now become some six or eight—are well worth covering, we apply at least half a barrowful to each patch,

and beneath this the most intense frost has little power. This covering remains untouched in conical heaps until the early part of March, when, or in some years a little earlier, cracks, or fissures, may be seen in these tan hillocks, a warning that the kale buds are very active, and that their arrival may be expected daily.

Henceforth, the only thing is to look at the Kale two or three times a week; for in dry weather the old tan will trickle away from the crowns, and will require, about once a week or so, to be drawn into compact hillocks again.

R. ERRINGTON.

HORTICULTURAL SOCIETY'S EXHIBITION.— 9TH JULY.

THE weather all this week was very uncertain. On Thursday night we had a fearful thunderstorm round London, and incessant sheet lightning from all parts of the compass for three hours or more. Friday was a hot, hazy day, and Saturday morning, the morning of the show day, was ushered in by a heavy rain, but the day cleared up by the time the plants were staged, and kept on improving till late in the afternoon; the day was not hot for the time of year, and damp grass in July never frightens any one, so that the last show day here for this season was as enjoyable as could be. The plants were not quite so numerous as on the two last occasions, but they were extremely well grown, and in greater variety than I recollect for a July Show. The fruit was in far greater quantities, and in much better style, than it was ever seen before at this, or at any other garden, including Covent Garden itself; for although waggon loads of fruit may be seen there every day in the week, very little of it is more than three-parts ripe, and it used to be the same at these garden exhibitions, but the judges on fruit tightened the reins, and here is the result. One hundred and seventy entries of fruit were made here that day, and such fruit shall not be seen again till this time next year at the same place. Her Majesty and the Duchess of Sutherland were up to the winning post close together. It is always an instructive sight to see such distinguished personages contending for such prizes at a public exhibition. Her Grace was there, and saw how the prize went with great good humour.

NEW PLANTS.—One would hardly believe that a plant which has been under cultivation in this country for the last thirty years could now be classed among new plants, yet I must so class it, for I never saw it in flower before, and I have seen as many flowers as most men. *Disa grandiflora*, a ground Orchid from the Cape, is as fine a thing of the kind as is to be met with anywhere; but, unfortunately, it is one of the most difficult plants in the world to keep or to manage well. I have myself gone so far with it as to send a scientific person to the spot where it grows, on the summit of the Table Mountain, behind Cape Town, to register the weather, moisture, and other points, all the time it was growing and flowering. I had plenty of ripe tubers of it, with all that could be guessed about its proper culture, and fresh tubers over and over again, yet I never could keep it more than two years; and I never saw a live flower of it till this day, and I have known a German gardener, returning home from Baron Ludwig's garden, bring a large box full of the roots of this *Disa* to pay his travelling expenses. One of our first nurserymen bought them all, and sold them out, at a high price, among some of the best gardeners in the whole world, but not one out of the lot had ever flowered. I have seen many better looking, and much stronger plants of it, than the one now in flower, and some day or other I shall sketch out the way to keep it healthy

for a certain time, at least. It looks much like one of our own common Orchids when not in flower, throws up a stalk six to ten inches long, with the flower or flowers on the top like our Bee Orchis, only a little stronger. The flower is most beautiful, and unlike any we know in cultivation. It comes nearest to a *Cypripedium* flower, but has only three principal parts, two side wings, as it were, and a central hood turned upside-down, and opened in front so as to look like a hand-scoop; the wings or sepals are of a rich orange-scarlet, and the scoop is French-white, lined, and veined all over with bright pink, after the manner of an *Abutilon* flower. There was only one flower on the plant.

LAPAGERIA ROSEA.—There was a noble plant of this splendid climber, from Mr. Veitch, trained on a Lanrel trellis, four or five feet high. It had fifteen of its large, rosy, drooping, Lily-like flowers open, and a finer hardy climber was never seen. Some doubt its being quite hardy, but knowing the very spot where it comes from, and all about it for years past, I have not the smallest doubt myself of its being perfectly hardy with us, in dry soil, just like *Bomarea* (*Alströmeria*) *acutifolia*, and the same treatment will do for the two exactly. Besides, the very first living plant of it I saw was three years ago, with Mr. Low, at Clapton, after standing out that tremendous hard spring, under a common hand-light, in the open border of the "American ground."

Treated as a hardy plant, this most lovely *Lapageria rosea* ought to be cut down in the autumn like a hop, then for the first few years some coal-ashes should be laid over the roots to save it from any very hard frost, until the roots were old enough to stand any degree of cold. None of the gardeners with whom I spoke pronounce this name right, and it is very difficult for an Englishman to manage the right sound of *g* in this name. A Scotchman can catch it directly he hears it sounds like *g*, in geck, as Burns has it in "Tiby I hae seen the day:"

"Ye geck at me because I am poor."

For geck, say geria, on the Calton Hill, and you have *Lapageria* to a T. The derivation of it is, that it was a second or third name of the Empress Josephine, the first wife of the first Napoleon, and the plant is in every respect worthy of the fame of that amiable woman.

The next plant is still newer, and by some will be considered a better one than the last, for this is the first time it has flowered in Europe; but it has been well known to gardeners for the last five years by a figure of it, with full descriptions, in the *Gardeners' Chronicle* for 1848, page 87, where it is first called the Long-flowered Hornberry, or *Ceratostema longiflorum*, from *keras*, a horn, and *stema*, a stamen, as our DICTIONARY gives the derivation; but it is not a stove plant, as there set forth, for Mr. Lobb gathered the seeds at 12,000 feet elevation on the Peruvian Andes. "The genus derives its botanic name from the long horns which terminate the stamens. The English word Hornberry may be taken as a fair translation of it." All the *Vacciniums*, or Cranberry order, being called by some kind of berry, as Blackberry, Bilberry, Cranberry, and such like, Hornberry comes in most fortunately. That is the way to name plants. Everybody seems to know Hornberry already, and before this long-flowered Hornberry is described. Well, it is "one of the prettiest of evergreen shrubs (a little out of the common, of course), with the foliage of one of the small evergreen *Vacciniums*. Its long, trumpet-shaped flowers are of a rich purple, and grow in loose clusters at the end of the shoots." Such is the author's account of it. My notes say—A bushy plant, with an excellent habit for a specimen plant; the branches growing close, but with a free style of growth; the leaves, small, thick, smooth, and blunt; the wood half-succulent, indicating, with the thickness of the leaves, a plant naturally liable to excessive drought at times, and

able to bear it. The flowers purple-erimson towards the mouth, and orange-scarlet at the bottom, nearly the same shape as the flower of *Erica ventricosa*, two inches long, and looking not unlike a shrubby *Æschynanth* at a little distance.

VERONICA VARIEGATA.—A hybrid plant and a beautiful one. It was also in Mr. Veitch's collection of new plants. This is a fine cross from *salicifolia*, by the pollen of *speciosa*, and the *variegata* is seen in the flowers, which are in heads of long spikes; the bottom of the spike is of white flowers, the middle part French-white flowers, and the ends bright pink, with protruding stamens; the whole looking as much like artificial flowers as anything could be. This is exactly the kind of flower which looks so well in the hair, not as wreaths, but as single spikes or bunches, and they will stand all tossings about in a polka or fairy dance; and the new bonnets are now so open in front, that flowers never had so much chance to set off a fine-looking face to the best advantage. What an open contrast to the ugly, close bonnets which came out in 1848; the ladies had to walk *under them*, but now they can walk comfortably in front of their new bonnets! In such a mode, they cannot have too many flowers, and the *Veronica variegata* is a new style of flower to suit the present fashion to the letter, besides being one of the best exhibition plants, and a hardy greenhouse plant to boot.

The new *Philesia buxifolia* was there also: a small plant, with seven large flowers open. What a beautiful little plant it is!

Also six more pots of the new yellow *Leptosiphon*, the gayest of the lot. There was a new *Hoya*, looking much like the old Honey-plant, but the flowers are different—pure white, with deep divisions or lobes to the corolla: it is well worth having; the name is *fraterna*. There was a cut flower of a very curious *Arum*, from Smyrna, with a long, dark-purple spathe, and the spadix, or long cylinder, on which the flowers come, was as black as my hat, and as long nearly as my arm.

BEGONIA PRESTONENSIS.—A new cross seedling, of which I heard a good deal, was there also, but I confess I was quite disappointed with it. I saw two crosses of this family last autumn that are far superior to it, and there is not a word of truth in the parentage given for this cross. There is nothing in which we are so far behind as in the genealogy of our garden crosses. If we said that so and so were a cross between Poppies and Horseradish, we should be no whit behind some of our genealogists. *Nitida* was said to be the pollen parent of *Prestonensis*, but nothing even of the section to which *nitida* belongs is manifest on the face of it. Look at Mr. Ingram's seedlings by the pollen of *nitida*, and a blind piper could tell the difference; some may think all this of little moment if they get a good seedling, but the truth is, that false parentage stops improvements on the threshold, for who would think of crossing *cinnabarina* over again by *nitida* if this and such stories are believed; and when we know to a certainty that *nitida* is the best pollen parent in the whole family, is it to be endured that that cross should stand in abeyance because some one lost a memorandum, and believed that we had the cross before him?

PLECTRANTHUS CONCOLOR PICTA, alias *Coleus Bloomii*.—I described this new plant, from Mr. Low's collection, last October. It is certainly a strange thing for a blotched-leaved plant, but not more so than the way every succeeding writer tries to make out a difficult plant before it comes into flower. My own opinion is, that it is neither a *Plectranthus* nor a *Coleus*; but I think it would make as good a border plant for the summer as a *Salvia*, or, say, a wilderness plant.

There was a *Hoya Sieboldii*, but it is not so different from the old one as to justify a new name; and we must,

in charity, suppose that these attempts at new names for old things, or for trifling variations of them, are made in ignorance of the existence of the old things themselves; at any rate, the regular trade should set their faces against such doings.

There were a great many novelties in two collections of *variegated plants*, one of them from Mr. Rollison's, of Tooting, and the other from the Messrs. Lee, of Hammersmith; but as I named most of them last year, I shall not enter much on the variegated plants to-day. *Hemadyction venosum* is a beautiful leaved stove climber, like an *Echites* in growth. The different *Elaeodendrons*, again, are elegant looking shrubs. A dwarf one, called *venosum*, I would recommend to every amateur who has a stove; it takes up very little room, and is always in beauty with its marked leaves. *Micania scandens*, a climber, is next to the *Cissus discolor*, which is the king or queen of all the variegated plants. There were two full-grown *Pine-Apple* plants as variegated as could be; and a *Fuchsia globosa* as variegated as that. This *Fuchsia* was shown before, five or six years since. *Punkia undulata*, in the variegated form, would make a nice rock-plant. *Oleanders*, *Hydrangeas*, *Pittosporum undulatum*, and many more old things, were in a variegated dress, and looked gay enough.

The next newest things were SEEDLINGS, and among the *Pelargoniums* and *Fancies* there was nothing better than we had already, nor so good, or that promised a new strain, except two pure, double, White Geraniums: of the greenhouse kind, one, a dwarf-growing plant, with ragged flowers, that would be a treasure, had it not been far surpassed by another double, White, on the same stand. This last is as white, *all over*, as the fresh driven snow; the petals are as flat and even as those of an Oleander. Indeed, if the flowers were shown without the plant, one would be apt to mistake them for a semi-double *Neriana*. It was exhibited by Mr. Jackson, of Kingston, who had another seedling, from an old seedling of mine, the first that appeared in the *Gloxinias*, more than twenty years ago, and named by Mr. Low, of Clapton, *Violacea*. This new one is *Violacea superba*, and is a very beautiful thing, and is the best of that purple-violet colour in the genus. He also exhibited a running *Tropæolum*, with a foreign name, *Schewriana*, a very pretty summer addition to this tribe, with straw-coloured flowers, blotched with purple inside. It will be as hardy as the Canary plant, with a much better foliage, and flowers six times the size. There were ten or a dozen *Fuchsia* seedlings not better than the best of the old ones. The two best whites were called *Miss Hanbury* and *Olio*. The two best red and purple were *Macbeth* and *Elegans*. *Pearl of England* is reckoned the best white *Fuchsia* of the old one, and there was one called *Duchess of Lancaster*, in the seedling tent, of great promise. The *Ixora javanica* has turned out the finest, and best-to-grow-plant in the family; there was one specimen of it from Mrs. Lawrence—the finest plant that was ever exhibited. The *Dipladenia atropurpurea* is coming out again quite fashionable, and the old *Sensitive plant* was there, and as large as the largest currant-bush in the kingdom. The more ordinary things will have to stand over to another week. D. BEATON.

MANURE WATERINGS.

"WHAT can be the matter with these *Pelargoniums*?" said an inquirer, not long ago, respecting a lot of fine plants that were fast shedding their leaves, and looking as miserable as possible. "Nothing," continued he, "has been done to them beyond the usual treatment, except acting up to the recommendation of the writers of THE COTTAGE GARDENER, and giving them a weak watering with Guano Water." Weak, eh! and a smell of

the soil in the pot afforded confirmation strong that something more than a solution of triple $\frac{1}{4}$ had been given to them. The solution had been so long applied, and so many waterings had been given afterwards, that the only hope I could give, not of recovering the plants during the present season, but of saving the stock, was by advising the taking off the cuttings directly, and then shaking away the strongly-manured soil, and re-potting in poor sandy earth, after washing the roots, and keeping them in a close place until fresh roots were freely forming. So strong, however, did the soil smell of ammonia, that I must add, the chief hope was founded in getting new plants from the cuttings, as the young shoots seemed less influenced than the older parts of the plant.

There are few things in which young amateurs make more mistakes than thus supposing that their plants cannot have too much of a good thing. We know that even Prussic acid is useful for medical purposes, but we also know how small a portion will destroy the most robust constitution. Guano is valuable to the gardener as well as to the farmer for its stimulating and nutritive properties; but its very concentrated richness renders it necessary to use it upon tender plants with great caution. Even those with considerable experience will, at times, make a mistake with it when they least expect it. I lost two or three fine Fuchsia plants from this cause this season. I was setting some large plants of these, and other things, in a veranda, where it was unadvisable to use much manure-water, as the smallest drop spilled would be seen on the white stone pavement. I resolved, therefore, before mossing the surface of the pots, to scatter just a pinch of Guano on the soil, considering that each watering would dissolve some of its nourishing properties. I took a little between my thumb and two fingers, in fact, the quantity was not more than I have seen many a devotee of tobacco-dust sniff up into his nostrils at one pinch, and the result, on the majority of the Fuchsias, has been quite equal to my expectations. But either these two or three plants were less able to bear this treatment, or, inadvertently, I had sprinkled over their soil twice, which is not unlikely; or some young experimentalist, who, when the result is unfavourable, generally belongs to the wonderful family of "nobody," had been imitating my example. Be this as it may, the plants, the day after being watered, dropped a number of their best leaves, and appeared as if they would lose more. Suspecting the cause, an attempt was made to keep the plants healthy by means of the syringe, and to give little water, until the Guano, intimately blended with the surface soil, had lost part of its strength by exposure. This, persevered in, might have saved the plants; but as they formed no agreeable contrast to those other plants beside them in luxuriant health, they were removed, and then two or three good waterings thoroughly finished them. This fact will miss its aim if it does not lead to the practice of using all manurial solutions in a weak state.

In the case of good Guano, one ounce will make a strong-enough solution for four gallons, to be used for the generality of soft-wooded plants, and half of that quantity will do for hard-wooded ones. In making up repeated solutions in the same vessel, if the grounds are retained a less quantity must be used each time. Double the above quantity may be used safely of superphosphate of lime; and that, too, is one of the safest of all the artificial manures for top-dressing a pot plant, as it is a long time before the water from a watering-pot washes its virtues into the soil. As much as a common-sized hand can take comfortably between the thumb and the two first fingers may be spread on the surface soil of a pot, six to eight inches in diameter, containing any soft-wooded plant it is desirable to grow with great

rigour. Rhododendrons in pots, Camellias, &c., should have about half that quantity; Azaleas and Epacris, when making their wood, about one-fourth as much. One quart of fresh soot, and a pint of lime, will make a beautiful clear solution for thirty-six gallons, and half the quantity for the next filling; and this will do admirably, now and then, for Geraniums, Calceolarias, Fuchsias, &c., with alternate clear water waterings, but at that strength it would ruin most hard-wooded plants. In fact, the most of them prefer something cooler*—as a weak solution of one-year-old cow dung. All excrements of animals must be used in solution with great care, and after they have had time to ferment and clear themselves when in a fresh state. There is less danger when using them several months old. I mention the case of these unfortunate Fuchsias as a warning, as, though using manure-waterings largely, I have not been caught for many a day previously. I would, therefore, strongly advise all young beginners to err on the side of weakness. In the place of manure-waterings, a top-dressing of from six months to one-year-old cow dung, horse dung, deer dung, or sheep dung, may be used with advantage by the timid. According as the pot ranges from six inches to twelve, the dressing may be from a quarter to one-half, and two-thirds of an inch in thickness. This will do admirably for all soft-wooded quick-growing plants, and during the growing season the top-dressing may be renewed in six weeks or two months. In the case of such plants, and also with Strawberries, Cucumbers, &c., I often combine this surface-dressing with weak manure-waterings.

One word more. Just like animals, fast-growing plants like a change of food. I find, therefore, that it is advisable to change often the liquid-manure imparted. If attention to *weakness* is given, a small quantity of the artificial kinds will serve a large establishment for a twelvemonth.

PROTECTING GREENHOUSE PLANTS OUT-OF-DOORS.

"I have several large plants of Azaleas, Camellias, and Rhododendrons, which I am obliged to set out-of-doors in summer. I am aware that the pots and tubs would be better plunged, but then the trouble and the bother are so great. Cannot I let the heads have sunlight, and keep the roots from being roasted by any other means?" Yes; but not, as one of our friends advises, by having the pots painted of a slate-colour. This would only make matters worse. The red pot occupies a middle place, as an absorber and a radiator of heat. The dark colour of the slate makes it both a first-class absorbent, and a first-class radiator of heat. Hence, we should not consider slate-tubs the best things in the world for growing tender plants in out-of-doors. We should be afraid that the roots close to the side would endure something like scorching in warm days, and something almost amounting to freezing in cold nights. Had we orange-trees in slate-tubs, that we were obliged to expose to an unshaded sun, I should be inclined to change the dark colour to a light one, by painting the outside with a stone-colour, and making it resemble stone, by throwing on silver sand whilst the paint was wet. The vessel would thus so far be changed into a reflector, instead of an absorbent of heat. A similar plan might be adopted with large plants in pots. Those in wooden boxes would take no harm. Where painting was considered troublesome, a better plan still would be to cover the pot on the sides exposed to sun and light, or even all round, with a piece of light-coloured cloth. Anything would do; a piece of old mat; a wrapper of hay or straw-bands; a piece of turf placed round it; but the piece of cloth would be as effectual as any, and the lighter

* By cooler is meant, less stimulating, owing to there being less ammonia present.

the colour, and the greater the body of air between the sides of the pot and the protecting covering, the better it would be. This simple precaution would save from injury many a valuable plant in summer, and would be quite as effectual as placing the plant in a double pot. The reason why plants thrive better in summer, when standing in pits, with turf sides, than when standing exposed, is chiefly owing to two facts; first, that the walls protect the roots from the fierce action of the sun's rays; and, secondly, because the temperature is more uniform, as the earth wall, comparatively speaking, absorbs and radiates heat slowly.

CALCEOLARIAS AFFECTED WITH A BLACK LEPROSY.

Many complaints of this have reached me. I mention it prominently here to elicit cause and cure; as I am sorry to say, that whatever my ideas respecting the former, I can offer nothing satisfactory as respects the latter. The readers of this work are aware that some time ago I highly praised the *Kentish Hero* Calceolaria, and I did not say one word too much in its favour, for, for early and late and continuous blooming, few yet will beat or equal it; there was, in fine, something like *Hero worship* in all quarters, and, perhaps, none were more ardent than myself. Well, I had, in a regular flower-garden, in July last year, four as fine beds as the eye could look upon, but a thunder and hail storm settled them for the season. Many flowers were knocked off, but that was of no consequence, as, if health had continued, there were plenty to come. But what was worse, the fine foliage was riddled by the hail, and from all these places a black decomposing gangrene spread, until it arrived at the stems, notwithstanding applications of lime, sulphur, &c., to prevent it. Anxious to continue the stock, I propagated some earlier than usual, as I saw the beds would have to be replaced for the autumn; and though some of these cuttings looked pretty sound at first, they kept going and going, from the same disease, during the winter and spring, so that now I have not got one remaining; although, after always planting largely for several years, I generally had some hundreds to spare for those who liked it. I have now some six small plants in a bed, obtained from my neighbour, Mr. Busby, and I am glad to say, that his stock, as well as several others of my friends, is sound, although many others complain of this black disease. I have seen some traces of the same disease among other Calceolarias, but nothing to signify. I never saw any such thing until after the thunder-storm in July. Frequently the leaves turn up, as if they were infested with green fly, but seldom does the fly appear in unison with this black disease. There is one satisfaction; in the case of the *Hero*, the malady seems more constitutional than contagious. Every plant I had was more or less injured in July last year. Every cutting taken from the soundest part exhibited, even when rooted or growing, the same malady, sooner or later. These young plants were placed in the immediate vicinity of those received from my neighbour, and were even planted out with them. These latter are yet free from the disease, while the first are all gone. The purchasers of this plant had, therefore, better be sure that the stock is free from disease.

CALCEOLARIA SULTAN.

This is a fine, large, dark Calceolaria, suitable alike for pot, balcony, or bed. It is a worthy neighbour of the *Hero*. I confess I was prejudiced against it. It has rather a wide opening for the slipper, and I judged that the wet would get there and weigh it down. I had several kinds and seedlings this season that I expected great things from, and beautiful they looked out-of-

doors until the late rains, but then they were like bare poles. The *Sultan* has been beautiful in beds for a month past—ever, in fact, since the first week in June; and though heavy rains have caused the large flowers to bend, the first change of weather elevated them as upright as ever. None but the smaller yellow flowers have stood the weather so well. There are some good things in its vicinity, but every lady seems to see nothing else but *Sultan*. It has excelled the neighbour beds of the group. I consider it, as a dark colour, quite as indispensable as the *Hero* was for its orange-bronze. Its wide mouth frightened many from enlisting it, as well as myself, but first conclusions are frequently not sound ones.

R. FISH.

ROSE CLASSIFICATION.

(Continued from page 263.)

CLASS 10.—CLIMBING ROSES.—These, on account of their climbing, slender shoots, are easily known. I shall include all that have this habit and are used for this purpose, dividing them into sections.

Sec. 1. Boursault Roses, a variety of *R. multiflora*.—Fast growers and abundant bloomers. Examples are:—*Amadis*, or *Crimson*; *Boursault*, deep purplish-crimson, large, and semi-double.

Elegans, crimson-purple, streaked with white; very showy.

Gracilis, bright rosy-red, superb, large, and full.

Sec. 2. Rosa Arvensis, the Ayrshire Rose.—This section is remarkable for quick growth, very thorny branches, and abundance of bloom. These qualities recommend them for covering lofty walls, stems of trees, rough banks, or running up pillars, and covering arbours. Examples are:—

Ayrshire Queen, dark purplish-crimson; semi-double.

Dundee Rambler, white, edged with pink; small and double.

Ruga, pale flesh, changing to white; large and double.

Sec. 3. Rosa sempervirens, Evergreen Rose. This section is chiefly remarkable for retaining their dark green shining foliage through a great part of winter. In mild seasons, and in favoured localities, they are quite evergreen. They have also the property of blooming in large clusters, sometimes as many as fifty in each. There are nearly twenty varieties in this section. I select the following as examples:—

Alba plena, white, double; large and full.

Brunonii, bright purple; small, but very showy.

Félicité perpetuelle, creamy-white; beautiful, small, and full.

Myrianthus renoncule, blush, edged with rose; immense clusters.

Spectabile, rosy-lilac; large and double.

Sec. 4. Rosa Banksia, Banksian Rose.—Distinguished by their smooth stems, small bright leaves, and clusters of very small, elegant flowers. Examples are—

Alba (white), pure white; beautiful, small, and very double.

Lutea (yellow), fine pale yellow.

Sec. 5.—Rosa multiflora, The Many-flowered Rose.—This section may be distinguished by the abundance of bloom, combined with extraordinary vigorous growth. Unfortunately many of the varieties are rather tender, requiring a south wall in a sheltered situation. Examples are—

De la Griffierie, fine large flowers, of a rosy-carmine colour.

Graulhe, pure white, often tinged with rose; very double.

Superba, bright rose; large and fine.

Triomphe de Bayeux, white, with a straw-coloured centre; flowers arranged in flat heads or corymbs.

Laura Davoust, pink, changing to blush; immense clusters.

Russelliana, dark crimson; superb, and very double.

These two last are hybrids, and are very hardy and desirable.

Sec. 6. *Rosa rubifolia*, The Bramble-leaved Rose.—This section is the American Prairie Roses, remarkable for their rapid growth and large bramble-like foliage. They are of recent introduction, and, as yet, not much known. Examples are—

Baltimore Belle, white, tinged with pink.

Pallida or *Superba*, white; blooming in large clusters.

Queen of the Prairies, bright pink; large and double.

AUTUMNAL ROSES, FLOWERING FROM JULY TO NOVEMBER.

The whole family of the Rose has been divided by the growers into two large divisions, characterised by the seasons in which they flower. The Summer-flowering division I have already given, and now follows the Autumn-flowering one. The line of distinction, however, is not very exactly defined, for some said to be summer Roses bloom frequently in autumn, and some few of the late bloomers flower earlier than the great body of the class; yet these, on account of their difficulty in other respects, cannot be separated from the divisions to which they belong.

CLASS 11.—*Rosa bracteata*, The Macartney Rose.—Very distinct Roses, easily known by having green leaves or bractes close to the flower-cup; also by their bright, shining, small foliage. There are only two varieties.

Alba simplex, white; single flowers, but very pretty.

Maria Leonida, white with a cream-coloured centre; large and double.

CLASS 12.—*Rosa microphylla*, The Small-leaved Rose.—A very distinct class, with numerous branches clothed with the smallest leaves. Examples are—

Rubra plena, deep red; curious, large, and full.

Rouge de Luxembourg, reddish-purple; large and double.

These two classes are evergreen Roses, with bright shining foliage. To cultivate them well they must be grown against a warm wall, and the soil, or border, should be thoroughly drained. They are so beautiful, that this care and trouble will be amply repaid. They are not vigorous in growth, and, therefore, are suitable for low walls.

CLASS 13.—*Rosa moschata*, The Musk Rose.—Distinguished from all other Roses by their musky perfume. They bloom in immense clusters at the ends of their upright shoots, especially in the autumn. Examples are—

Blush, or *Fraser's*, pale red; small and semi-double.

Double White, creamy-white; small and double.

Eponine, yellowish, and double.

CLASS 14.—*Rosa muscosa*, Perpetual Moss.—Separated from the Moss Roses on account of their blooming in the autumn. Their mossy characteristic distinguishes them. Examples are—

Jean Bodin, rosy-blush; very double.

Perpetual White, white; blooming in clusters, very many and double.

CLASS 15.—*Rosa damascena*, The Damask Perpetual Rose.—Distinguished from the Common Damask Rose by flowering late; they are exceedingly fragrant, and perfectly hardy. Examples are:—

Rose du Roi, or *Crimson*, very bright crimson; beautiful, large, and double.

Celina Dubois, white; large and very double.

Josephine Antoinette, clear rosy-blush; beautiful, large, and full.

Mogador, rich purplish-crimson; brilliant, large, and full.

CLASS 16.—*Hybrid Perpetual*.—This is a very large

and useful class of Roses. They have been crossed from the Chinese, Bourbon and other species, and are to be distinguished by their perpetual flowering, and being different in habit and bloom from the original species. These hybrids are also more hardy, and stand the smoke of large towns better than the Chinese and Tea-scented Roses. From this class the forcing Roses are mostly taken—at least, such as are exhibited at the great Metropolitan shows. Growers in the country that force Roses, and have hitherto confined themselves to force with such sorts as the old Provence, Common Moss, and the Spong Rose, would do well to try a few out of this class; they force well, and bloom freely, and are very fragrant. Amongst the examples I shall select will be found many well known Roses:—

Auberon, bright rose, changing to red; very double and large.

Baronne Prevost, pale rose; superb, very large, and double.

Baronne Hallez, dark red; large and full; very fine.

Caroline de Sansal, clear flesh-colour, edges blush; very large and full.

Comte de Montalivet, violet-red; very large and double.

Duchesse de Praslin, blush, pink centre; large and full.

Duchess of Sutherland, pale rose; magnificent.

Edward Jesse, dark purple shaded with crimson; distinct, glowing, large, and double.

La Reine, rosy-pink, tinged with lilac; magnificent.

Géant des Batailles, brilliant crimson, shaded with purple.

Queen Victoria, white, shaded with peach; large and full.

Robin Hood, rosy-carmine; very large and double.

William Griffiths, pale satin-like rose; large and full.

CLASS 17.—*Rosa indica*, The Indian or China Rose.—China Roses are well known, and need no description. They are mostly grown in pots in greenhouses, or against walls. Kept in frames or pits through the winter, and planted out in early spring, they are by such treatment well adapted for beds on the lawn, or in the parterre. Their small growth, and abundant almost constant bloom through the summer and autumn, render them very suitable to plant in masses. Examples are—

Abbe Moiland, rosy-purple, often streaked with white; large and very double.

Aimée Plantier, white, tinted with orange; large and double.

Beau Carmin, deep velvety purple, and crimson-shaded; rich and very double.

Cramoise superieure, rich crimson.

Mrs. Bosanquet, delicate pale flesh, often white, clustering; beautiful, large, and very double.

Napoleon, bright pink; fine, large, and double.

Prince Charles, brilliant carmine; very double.

Tancrede, fine rosy-purple; distinct, large, and full.

Virginale, delicate blush-pink; large and full.

T. APPLEBY.

(To be continued.)

STOVE FERNS.

(Continued from page 263.)

Propagation: by Seed.—I trust our readers, growers of Ferns, have not forgotten my description of the moist places in which they, or at least the greater part of them, grow in a wild state. In these moist hot places they shed their seeds, which come up by thousands around the old plants. In our moist stoves, and more especially the Orchid-house, the more common kinds spring up from seeds so much and so freely as to become troublesome. I remember a wall on the north side of an Orchid-

house, at Pine Apple Place, which, partly from its situation, and partly from being syringed every day to moisten blocks of wood on which Orchids grew, was kept constantly moist. On this wall the common *Pteris serrulata* grew so thickly from seed as completely to cover it; so much so, that it became necessary to pull them away, and whitewash the wall, to prevent the Ferns from growing so much. And in Messrs. Loddige's Orchid-house there was, and may be yet, growing on the walls quantities of the *Adiantum capillus veneris*, chiefly seedling plants. These facts point out forcibly how we ought to propagate Ferns from seed.

I have raised great numbers of choice species by placing a slightly moss-covered brick under a hand-light, in a moist heat, or shady part of an Orchid-house, or even common stove. On these bricks I scattered the seeds, and soon had the pleasure to observe them growing; the only care bestowed was surrounding the bricks with common green moss, and keeping it moist by frequent sprinklings of tepid water. I was careful, of course, to sow seed, and not dust; for the capsules, or seed-cases, soon burst, the seeds fly off, and leave nothing but dust. The best way to be certain of real seed is to frequently brush off on the brick the real seed before it flies off from the fronds. The seed itself has much the appearance of dust, and requires a strong magnifier to distinguish it. If the desired species sown upon these bricks do not vegetate, the operator may be sure that no seed has been sown. Some kinds will not vegetate by this method, but may be raised under a bell-glass. To effect this, fill a pot with the compost described for potting Ferns in, sift a portion through a very fine sieve, and place it about half-an-inch thick upon the compost; then give it a good watering, so as thoroughly to wet the whole of the soil. Fit a bell-glass to the pot, lift it off again, and sow the seed upon the moist soil. The best way to sow the seed is first to cut off two or three fronds, and brush off the seed on to a white sheet of paper, then, with the finger and thumb, sow the seed evenly all over the surface of the moist earth. Place upon it a bell-glass, and set the pot in a shady part of the stove or Orchid-house. The sun must never be allowed to shine upon the bell-glass.

Fern seed will keep for an extraordinary length of time. The late Mr. Shepherd, Curator of the Botanic Garden, at Liverpool, obtained a crop of many kinds of stove Ferns, the seeds of which were brushed off specimens that had been brought from the tropics several years previously to coming into Mr. Shepherd's possession. He sowed them in pots filled with peat earth, covering each pot with a flat piece of common glass, and where the cultivator has no bell-glasses he might adopt the same method. To prevent drip from the condensed water on the underside of the flat glass, all that he would have to do would be to turn the glass over when the vapour had condensed; the air of the house would take it up off the glass. If bell-glasses are used (and I greatly prefer them) they will require wiping dry occasionally. The bell-glass should be a little smaller than the pot, so that water could be poured gently upon it to wet the surface of the soil whenever it appears dry. The seed is so minute, and so easily perishes, that the finest rose-pot would infallibly destroy it, but by applying the water over the bell-glass, the soil, by capillary attraction, becomes gradually moistened, and thus the delicate seed is preserved uninjured. If all goes on favourably the plants will soon make their appearance probably mixed with several common species. Some recommend baking the soil to prevent these from growing, but I always find seedlings of the desired species did not come up so freely, if at all, in soil so prepared. The experienced eye will soon detect the kinds wanted to grow, and the rest may be weeded out as soon as they are distinguished from the species

expected. When these have attained their second or third fronds they should be pricked-out, as it is technically termed, thinly over the surface of fresh pots, in fresh compost, at about an inch apart. In this position they may be allowed to grow till the leaves touch each other, then pot them off singly into thumb-pots, place them in a shady place till they are fairly established, and then subject them to the same management as the larger established plants.

By this method I have successfully raised some of the more rare species, such, for instance, as the beautiful *Cheilanthes lundigera*, and the *Gymnogramma chrysophylla*, as well as the rare and beautiful *Cenopteris squamata*.

Propagation: by Division.—Many kinds of Ferns can be propagated successfully by division. Some send out stolones or creeping root-shoots—the *Adiantum assimile* is a notable example—and these can be easily detached from the parent plant, potted and shaded for a few days, and then soon make good plants. These suckers, as they may be termed, are most conveniently detached at the time of potting, or a pot well filled with them may be taken to the potting bench, the soil shook off, and the plant divided into as many divisions as it will make, then potted separately, and shaded till established. Others that do not send out these side-shoots, or suckers, may be divided into several plants, care being taken that each division has a good lot of roots to it. The *Adiantum cuneatum*, and several others, may be divided into several pieces, or plants, in this manner. One point I must not forget to mention, and that is, *young plants are most certain to grow when thus divided*. Old plants I have divided into apparently well-rooted divisions, and such I have often found to fail nearly entirely. Plants of two years old, that have several crowns, succeed almost every one; but plants three or four years old almost as generally fail to grow.

T. APPLEBY.

(To be continued.)

NOTES ON THE GOOSEBERRY.

ALTHOUGH it has been often said that Lancashire and other north-western counties excel all other parts of England in the production of this fruit, as far as size and crop are concerned, while it is also said that the north of Scotland excels Lancashire in the flavour and perfection to which they are brought; nevertheless, we opine that the great Metropolis would be poorly provided, did it depend on these localities for its supply; for we question very much if a single basket finds its way into the London market from either of those districts. Supposing, therefore, that the neighbourhood where this fruit is extensively grown for that purpose, must not be altogether unsuited to its growth, a few observations on the treatment it receives there may not be altogether out of place in a journal especially adapted to convey just and economical principles.

Although, doubtless, quantities of this fruit are cultivated in the counties bordering London, on the south and west, and even some may be grown a little to the north of it, still the great bulk are grown in the counties of Surrey, Sussex, and Kent, or the parts of them which lie to the south-east of the great market of the world; and as the last-named county is the one from which the greatest supply is sent, we will confine our observations to the treatment the bushes receive there, as well as other notices of the evils it is subject to.

Beginning with the last-named first, we will observe that the Gooseberry-trees in Kent seem to suffer more from the small birds, in early spring, than we have ever known them to do anywhere else; as it is not unusual, after being pruned, and left apparently all right, to find

them stripped of almost all their buds some few days after they begin to swell. The mischief is all done in a day or two; and although the "Bullfinch" often gets the blame of it all, yet other little "chirpers" assuredly assist, but the celerity with which it is done, and the quiet way, deceive many "old hands," who had previously determined to try and watch the movements of their cunning enemy. Suffice to say that it is done, and the careful pruner is mortified to find that the shoots he left are totally denuded, except some two or three weak eyes at the tip, which are left either because they were too insignificant objects for the depredators to notice, or because they are most difficult of access, the spray giving way beneath the weight of the depredator perched near the end. This evil is difficult to contend against. Some have endeavoured to meet it by watching their grounds (where they are sufficiently extensive to repay that trouble) for a few days; others endeavour to scare their birds away by some of the contrivances which serve that purpose for a single day or so; but after all, a great deal of mischief is done about the end of February, or beginning of March, by these little depredators; and though some have interlaced their trees with white and coloured thread, or worsted, representing net-work, still the effect is not always sufficient to keep away these enemies; and what makes the case somewhat singular, certain kinds of Gooseberries, as the *Yellow Roughs*, invariably escape their ravages. This induces some parties to plant this kind more extensively than others, where they are liable to so much injury.

We will not here enter into the merits of the various kinds grown for market and private use, yet we may observe that certain kinds have a preference shown them on the same principle that has established the Ribston Pippin Apple, the Green Gage Plum, Black Hambro', and White Muscat Grapes, and some other fruits, in the position "of the standard of excellence" in their respective classes. Perhaps the public are not so agreed as to which has the claim in the Gooseberry list, but the *Warrington* stands high, as a rough red one. This Gooseberry our north country friends will recognise under the name of *Ashton*; while they have another equally a favourite with them for table use, which they call the *Turkey*, a black-red, of peculiar flavour, and the plant different in habit from most others, by being upright in growth, &c. The berries are rather globular than long, and not very large. This is called, in the south of England, the *Champagne*. Other kinds are equally favourites with the above with their respective admirers, but the general mass of buyers enquire for the *Warrington*, when they meditate preserving them.

We will now take the next misfortune to which the tree is liable, and it is one more especially within the means of the cottage gardener to control—we mean the *Caterpillar*, an enemy formidable enough, yet certainly more easy to combat with than the small birds. The caterpillar requires to be energetically met, otherwise it soon divests the trees of their leaves, and, consequently, they are crippled for the season. The Kentish fruit-grower does not always attempt the most effectual means to overcome this pest, which is hand-picking them off, but he does the next best thing, by scattering lime, or lime and soot, over his trees on damp mornings, as soon as these gentry have made their appearance. This, and, probably, some assistance from the same class of birds which did the mischief in early spring, is often sufficient to keep these enemies down, and, certainly, there is no better antidote to the caterpillar than the small birds which prey on them, but these are not the same birds as those which destroyed the young buds. Many years ago we tried hellebore powder, with a fair share of success; and we have carried a pan of burning brimstone over the square, or amongst the trees infested

with this pest, taking care to keep it so far from them as to prevent its doing any harm to the foliage. Thunder, and the condition the atmosphere is in at the time, is certainly fatal to many insects in the embryo state, while the heavy showers which often accompany the same are likewise beneficial, as cleansing the foliage of impurities left them; but as these are natural agents, we have no right to claim any credit for what assistance they afford us. If the fruit-grower finds his trees thus deprived of leaves, he generally picks off the berries, and sends them to market, and thereby relieves the tree of a burden which, under its then weakened condition, it is no longer able to bear; and it generally makes such a second growth as enables it to supply the pruner of the following season with a sufficiency of shoots to choose from.

Though we have only mentioned these two evils as coming within the scope of the cultivator, we may mention one over which he has but little control—we mean the *spring frosts*. We have seen extensive plantations that were reported to suffer almost every year from this cause, and others that are said always to escape. This is owing to natural causes; but our readers will be curious to know that some plantations, which would seem to boast of some of the best soil to be found anywhere, and lying in some nice sheltered situation facing the full south, almost annually become a victim to the frosts at the end of April or first of May. Now, as we beg to lay particular stress upon the cause of this, we may mention, that it is the "apparent" fine situation which is to blame for it; as by far the best plantation we know of is on ground inclining rather rapidly to the south-west and west, and even the north is not without its advantages. The reason is obvious: with a south aspect the trees are forwardest in vegetating, and a bright sun usually following a frost, the tender and delicate organs of the plant become too suddenly thawed to be able to bear the rapid changes it has undergone. We know of a plantation of about two acres facing the north-west, on rather a declivity; this has always been remarkable for escaping this evil, and not only that, but has been so productive as to furnish several hundred bushels of Gooseberries, although at the same time standard trees, as Apple, &c., were amongst the occupants of the ground, as well as the Gooseberries. We hope some of our readers may take a lesson from this, and before they be finally led away by the belief that a slope facing the south must be early and safe.

As it requires some little discrimination to foresee what is likely to be the most prolific trees to plant on certain soils, we will, at another occasion, take this matter up, and then point out the culture and treatment the plant receives at the hands of those who make it their business to send several hundred bushels, or sieves, to London market every week during the season.

J. ROBSON.

APPEARANCE OF CROPS IN HAMPSHIRE.

In the absence of any statistical returns of the appearance of the crops of corn, grass, &c., in this country, it must be apparent that the interest of the community requires that reports should be made upon the subject from the different districts of England, in order that any probable deficiency, or superabundance, of our agricultural productions may be anticipated.

I therefore propose to report upon the appearance of the crops in Hampshire, based upon my own observations. After the very unusual and difficult season for Wheat sowing, it might be expected that a deficiency in

the produce would be the result; it is, therefore, a matter of importance if an estimate can be made of the probable deficiency of so valuable a crop as that of Wheat, with a near approach to accuracy.

Upon all dry soils, sown in good time, the *Wheat* looks likely to produce a fair crop; the appearances up to the middle of June were certainly in favour of an average produce; but the wet and boisterous weather experienced since that period forbids such anticipation; it being well known that our greatest crops of Wheat have occurred when the weather in the month of June has been dry and hot, without much wind. On the other hand, it has been noticed that more or less deficiency of this crop invariably follows when the weather, during the blooming time of the Wheat plant, has proved cold, wet, and windy.

Such has been the effect of the weather during the past seed time, that a considerable portion of the driest soils were seeded in bad condition; the consequence is a deficiency of plant; the results of which, in all probability, will be a considerable diminution of the crop. It is also to be observed that a portion of these soils have not been sown with Wheat on account of the unfavourable season. The cold clay lands, and much of the Wheat growing soils, as they are termed, even where the land is in good condition, and was seeded in proper time, wears a most unpromising aspect. The lengthened period of wet weather has encouraged the growth of grass and weeds to such an extent as to damage seriously the crop; and in most instances, where the weeds have not been hoed out, the ears of Wheat are so small that a light produce must be the result.

A portion of the heavy land, sown during the untoward season, cannot possibly produce a satisfactory crop. A considerable quantity of land, intended for Wheat, upon this soil, never could be seeded during the usual season; it has, therefore, been sown with spring Wheat of different varieties, and it must be confessed looks very well up to the present time; but spring-sown Wheat never can be depended on to produce a good crop, much less to make up a deficiency arising from an exceptional and unusual seed time. Large breadths of cold land, intended for Wheat, could not be sown, and has, therefore, been appropriated to other crops.

My opinion is, that there is twenty per cent. less land sown to Wheat than usual in this county, and that the produce arising from that which has been sown, will, under the most favourable circumstances, as regards the yield and the harvest, prove at the least fifteen per cent. per acre under an average crop.

Of Lent corn a great breadth has been sown; I should say about as much more as the Wheat crop is less than the usual quantity; and the appearance of the crops of *Barley* and *Oats* are good, and certainly bid fair to produce more than an average crop of straw. The quality of the grain, however, is likely to be inferior, on account of the late seed time, for the frost continued until so late a period, that a great portion of the *Barley* was not sown until a fortnight after the time usually chosen for the purpose.

Both *Barley* and *Oats* are decidedly late in coming into ear, which will make the harvest late, should the weather prove ever so favourable. Winter *Beans* are very deficient in plant, although the crop has gone on well, and made a very luxuriant growth until within the past few days, during which time the haulm has been attacked with blight; but I have seen no instance as yet where the crop is likely to suffer serious damage.

The *Pea* crop has also looked very promising until lately; since the dark, windy weather has set in from the south-west the green aphid has appeared upon the plants in many fields, from the attack of which I fear injury to the crop will ensue.

Spring *Beans* are late, and do not show so much haulm as in some seasons; they are likely to blossom well, and I do not at present see any black aphid upon them, nor do I expect it unless we get a dry north or east wind.

The crops of *Clover*, upon all soils, are decidedly over an average produce, and having been cut nearly all at one time previous to the late rains, I do not recollect having seen the crop more generally and seriously damaged for many years than it is at present. The meadows, and upland pastures, also, have a good crop on them, and as a fair proportion yet remains to be cut it may be got up well, although much has been injured where cut in the early season.

Of *Potatoes*, a short quantity has been planted this season; many growers having been heavy losers last year have been deterred from planting. The season, hitherto, has, however, been very favourable for this crop, there having been no excess of moisture since planting time. I have noticed a few instances of the blight, although, generally, they are looking well.

JOSEPH BLUNDELL.

OPERATION FOR CROP BOUND.

THE remarks of Dr Horner, inserted in page 270, on the above operation, are so evidently intended to apply to my communication which appeared at page 48 of the present volume, that I do not hesitate to reply to them.

Dr Horner denounces "laying open the crop to the unwarrantable extent of two inches at its lowest part, as recommended in THE COTTAGE GARDENER." Until Dr. Horner can point out where the recommendation to open the crop at its lowest part is to be found in THE COTTAGE GARDENER, he must be content to remain under the imputation of negligent misrepresentation. I fully agree with him on the extreme folly of making an incision at that part where the food would, by its weight, tend to open it; but until he can prove the suggestion to have been previously published, the credit of originating it is entirely his own.

Dr. Horner, it appears, practices making an incision, two-thirds of an inch in length, in the crop of a Sebright Bantam pullet, which could scarcely have weighed three-quarters-of-a-pound, whilst he condemns, as "unwarrantable," an incision three times as long (namely, two inches) in the crop of a Cochin of ten pounds. I should have imagined that, in proportion to the size of his patient, the Doctor's was by far the more severe operation.

The suggestion to remove the swollen materials with a pin is amusing; in the case in question the quantity removed was fourteen-and-a-half ounces, and by the muscular contraction of the crop exercised on it for many days, it had been compressed into a mass of such firmness as to be perfectly unyielding when pressed with the fingers, and was

only removed with considerable trouble by the use of a strong pair of dissecting forceps.

The mass, from the length of time it had remained in the crop, had become offensive in the highest degree; it was therefore desirable to remove every portion, an object which was more readily accomplished by washing out the crop, which, therefore, I do not think "quite uncalled for."

I have since operated in several cases, and in every instance my "unwarrantable" operation has been followed with perfect recovery.

I mentioned Dr. Horner's criticism to one of the highest living Zoologists, who stated, that on one occasion, when at the celebrated anatomical school of Joshua Brooks, a vulture swallowed a rat which had been killed by poison, and which was immediately extracted by an operation, after which the wound was sewn up, and with so little injury to the health of the vulture, that it lived many years after Brookes's death, in the Gardens of the Zoological Society.

In one of his letters in the present volume, Dr. Horner states, that "Truth is his aim, and that he is always ready to read the remarks of others, when expressed with a due regard to courtesy;" but the dogmatical employment of such terms as "unwarrantable," "quite uncalled for," &c., are scarcely consistent with the courtesy he expects from others.

W. B. TEGETMEIER, *Tottenham, Middlesex.*

THE COTTAGE GARDENER'S PONY.

(Continued from page 170.)

THE DUMB SLAVE.

HISTORIANS (not of little ponies, but of great people.) have frequently endeavoured to mark out particular epochs by inviting especial attention to certain notable improvements in men's manners. Thus the abolition of human sacrifices; the introduction of alphabetic writing; the mitigation, or abolition of all the evils of personal slavery; and the respect paid to woman, and her acknowledged position in society, have each been used as land-marks, or guide-posts, in their way, to note that one rough stage had been got over, and another and a smoother one was about to commence in the course of civilisation.

One test of this kind has been brought prominently forward by a recent writer on Grecian history. He contends that it is an infallible sign of an advance made in refinement, when men have learnt to abstain from maiming, disfiguring, and mutilating the persons of their slaves and prisoners, and otherwise ill-treating them. Contending that the conduct of the Greeks was humanity itself in this respect, when contrasted with that of their barbarian contemporaries, he largely relies on this one established fact as conclusive evidence of moral superiority. To me the remark seems to carry with it much weight; and, if its truth cannot be gainsayed, I almost think it will be found capable of a larger and wider application.

When men no longer treat their wives like servants, their servants like slaves, their slaves like brute-beasts, surely a little further practical exercise of enlightened benevolence should be expected to bring them to treat their very dogs, horses, and cattle, with kindness, and with a due respect to the handiwork of Him who made us and them. Unusual attention is now-a-days paid to the study of Natural History, as illustrating the principles of natural religion; one consequence of which ought to be, a ready recognition of certain natural rights as belonging to all living creatures, under one common superintending Providence. The contemplation of the great truths of natural religion (*unaided by better and purer lights*) would seem to have led some of the gravest heathen doctors into inculcating, as religious duties, certain preposterous and extreme attentions to be paid to the lower animals. But, on the other hand, the speculations of recent travellers would lead us to infer that the oriental nations do many of them still preserve not a few of the traditions of the patriarchal times, with many manners, customs, and time-honoured institutions, which have with them survived the weightier obligations of a pure religion. Some explanation certainly is required for the anomaly that, in this religious and enlightened community and century in which we live, a greater amount of barbarity

marks our treatment of some of the lower animals (the horse in particular), than if we were living in a Mahomedan country, and in an earlier age. Not long ago, a Turk was commenting on the miserable treatment which our horses experienced in a great London thoroughfare, and being near Exeter Hall, he finished by remarking, "but I conclude there is nothing about them in your book." Here he was wrong, however. Even in France, and generally in catholic countries on the continent, where the Bible is but little read, men have, some how or other, learnt that there is a limit (not very hard to be ascertained) providentially set to the dominion which we exercise over the brute creation. Cuvier tells us, as I have already informed your readers, that *ten* horses are used up in England for one on the continent.

Seeing the immense popularity of Mrs. B. Stowe's philanthropic exposure of our neighbour's faults, one would hope that a philippic on our own barbarities towards our own DUMB SLAVES might be equally popular. The writer of these Pony Essays fully sympathises with much of the public indignation which is being continually directed against some of the evils of our factory system; and he laments the needless waste of human life arising from our operatives being pent up the whole year in close alleys and unwholesome abodes, getting too little exercise, and doing too much work. It is a grave fact, that *three* factory children die under age, for *two* of the children of the farm-labourer; and that whilst many farm-labourers attain old age, few factory hands are so fortunate. All this is very bad; and if emigration should continue it will be found to be very wasteful too. But all this affords no excuse for the inhumanity wherewith the poor cab-horse is treated in the service of the same enlightened and humane public, whilst it is so properly holding up its hands against negro slavery and the factory system.

I have said that the factory system will turn out to be very wasteful, so soon as emigration shall have taught us the real value of the labouring class. In respect to the humbler "labourer," however, whom I immediately treat of, there is less difficulty in arriving at a precise result, because the deterioration of his frame, and his premature wasting away, are matters which can be directly made subjects of calculation. A gentleman purchases a stout, sound, young horse for about £60; after two years' tugging at that lumbering, ostentatious, half-ton of wood and iron, in which the honourable gentleman's personal consequence is duly notified to the world at large, the animal is found to be done-up, from having been employed, in fact, doing the work of two horses in his single person. He is then sold for about £16, and forthwith is transferred to a hack-stable, and to a life of unbroken toil and hard usage; this, too, with a frame no longer sound and healthy, in consequence of ordinary bad stable-management, and a postponement of all the natural habits, instincts, and requirements of the animal to the caprice of fashion, and the questionable sagacity of a groom. Such an animal, if left in the farmer's hands, or if in the possession of a foreigner (albeit the same were a catholic, or a Turk), might last, say, twenty years. In our 'honourable' and humane friend's service he just lasted two. Look at the difference—£60, less £16, is £44 loss in two years, or £22 a-year. But £60, distributed over twenty years, comes to but £3 a-year. The difference, £19 a-year, or one shilling a-day, gives us the actual cost of our tyranny: the money we lose by treating the best of brute servants as the most abject of slaves. This is the point from which I would wish to commence a comparison of the expense of a more natural and considerate treatment of our "pony" with the costly bungling which is all the fashion in this country. If I can show that bad, unnatural, usage is expensive, people may be inclined also to think it wrong.—VIGYOR.

(To be continued.)

A FEW MORE PHLOXES.

PHLOX PANICULATA (Panicked-flowered Phlox).—This is the oldest but one to be found in all our lists of Phloxes, and it is one of the hardiest too. This good-natured plant will live and flower in almost any situation; either in the

shade or in the sunshine; in a rich soil, and in a poor one; and, what is no small additional merit, I never saw the slugs much to attack this kind. Of course, it is increased by root-division, and it will stand in the same spot and flower well, yearly, for many years, if not too much root-injured at the time the border is being dressed off. It is a profuse bloomer, and its flowers are of a light purple colour. The stems rise from four to five feet high, and flower in August and September. It is a native of Virginia and Lower Carolina, and was introduced to this country in 1732.

Phlox paniculata alba is a white variety of the preceding species, and of the same habit in every respect. It forms a nice contrast in the flower border, in arranging the plants there; and from the hardiness of these two plants, they are found extremely useful for planting in gloomy situations, under the shade of trees, or in the front of or among shrubs in the plantations.

PHLOX WHEELERIANA (Wheeler's Phlox).—This is another old garden variety, which rises from about three feet to three feet six inches in height. It is very hardy, and, like the preceding, almost any situation suits it. It is a free bloomer, the flowers being purplish-red. It will stand for years in the same spot if not root-injured.

PHLOX RIVERSII (Rivers's Phlox).—This rises about the same height as the *Wheeleriana*, and is very much like it in all its habits, from the first putting out of its leaves from the ground to the very tip of its flowers. It is also equally hardy, and the flowers are of a deep reddish-purple. It is a profuse bloomer, and flourishes in any situation, whether in the open sunshine or in the shade.

PHLOX CORDATA (Heart-leaved Phlox).—A native of Carolina, introduced to this country in 1827. The flowers are of a purplish colour. It rises from three-and-half feet to four feet high, is a very hardy kind, and flowers in August and September.

Phlox cordata grandiflora is a variety of the above, and a very beautiful plant, rising from three-and-half to four feet high, and is very hardy. The flowers are somewhat paler than the latter, larger, and better shaped, with a white eye. It flowers in August and September.

Phlox cordata rosea is another variety of the above, and a sweet plant it is, rising from three-and-half to four feet high, bearing flowers of a good shape, of a beautiful rosy-pink colour, in August and September.

PHLOX SPECIOSISSIMA (Most showy Phlox).—This I had many years ago under this name, but since which time I have received two others, one under the name of *Lata*, and the other *Captivation*. I never could see any difference in these three plants when growing almost side by side, therefore I have put them down for one and the same thing. Perhaps it is *P. lata* of the books, and of the other names among nurserymen. It is a white-flowering kind; flowers large and of a good shape, and the plant being hardy and a strong grower, rising from three-and-half to four feet high.

PHLOX HYDRANGEOIDES (Hydranger-like Phlox).—This is a very free bloomer of a purplish-red colour, the flowers small but very numerous. It grows from about three to three-and-half feet high. It has proved rather miffey and tender with me as yet, but it is pretty, and flowers in August and September.

PHLOX CORYMOBSA (Corymb-bloomed Phlox).—This is a native of North America; the flowers are purplish-lilac, opening in August and September, and in height from three to three-and-half feet. It is a very pretty, desirable, plant, and is a free bloomer, and hardy.

PHLOX ACUMINATA is a native of the mountains of Georgia and South Carolina. It grows from three-and-half to four feet high; the flowers of a purplish colour, small, and the plant rather miffey in low ground. It flowers in August and September.

PHLOX SPECIOSISSIMA RUBRA.—This is one of the very best of the tall kinds. It is from three to three-and-half feet high, and the flowers purplish-red, and of good shape. It appears, from its manner of growth, and shape of flower, to be an improvement on the *cordata grandiflora*.

PHLOX MOLINENSIS is a good variety; the flowers of light streaky colour, of good shape, rises from three to three-and-half feet high: flowers in August and September. A very desirable kind,

PHLOX SCABRA (Rough Phlox) has flowers of a light

lilac. It is a native of North America, and called *Americana* by some. This rises from three to four feet high, and flowers in August and September.

PHLOX PRINCESSE MARIANNE.—The flowers are striped with white and pink. The plant rises from two to two-and-half feet high. With us it is rather a miffey bloomer.—

T. WEAVER, L. L. B. Lener to the Warden of Winchester College.

BEET-ROOT.

THIS garden produce was in high esteem both with the Greeks and Romans, and the comparative estimate of such roots by the former, appears from the fact that they offered to Apollo, in his temple at Delphos, a Turnip of lead, a Radish of gold, and a Beet-root of silver (*Pliny*, xix. v.). It is not our purpose, however, to linger over the classic history of this root, nor to while away even a quarter of an hour whilst noting down what our earliest English writers have recorded concerning its medicinal uses. We must, however, remind our readers, that old Gerarde cultivated "the greater red, or Roman Beet," in 1596, and that he had it "from that courteous merchant Master Lete." It is, adds our ancient botanist, "boiled and eaten with oil, vinegar, and pepper, and is a most excellent and delicate salad; but what might be made of the red and beautiful root I refer unto the curious and cunning cook, who, no doubt, when he hath had the view thereof, and is assured that it is both good and wholesome, will make thereof many and divers dishes, both fair and good."

Gerarde's anticipations have been more than realized, for not only have cooks made of this root "dishes both fair and good," but chemists have succeeded in extracting from it a rival to the produce of the sugar cane.

Upon this subject we have the following interesting notes from the last number of *The Gentleman's Magazine*:—

"The last accounts from Ireland of the manufacture of sugar from Beet root are very encouraging. As the subject is likely to excite increased attention, the following particulars of the French manufacture during the late war (when supplies from the colonies were prevented) are offered as historical memoranda. If they are partly unfavourable, it must be remembered that the knowledge of former failures is often necessary, as a guide to future success.

"The discovery of making sugar from Beet-root has been attributed to M. Achard, a Prussian, who published, at the end of the last century, 'Instructions for making Sugar, Molasses, and Vinous Spirit from Beet-root.' But the original idea was suggested in 1605, by Olivier de Serres, the celebrated French agronomist. In 1781 Marggraf, of Berlin, arrived at a stage in the manufacture which has obtained the name of discovery. Dr. Moseley, in his informing and amusing Treatise on Sugar, (2nd ed. 1800), has copied several particulars from Neumann's Chemistry, by which it appears that in Canada sugar was made from the maple-tree, and also in Sweden; that the common birch yields a saccharine juice; and that various vegetables, for instance Beet-root, afford saccharine concretes. It is also attainable from grapes, particularly dried raisins, for large grains of pure sugar are often found among Malaga raisins, that have lain long compressed together. (p. 132-5.)

"In March, 1800, sugar made by Achard from Beet-root, was received in Paris. The subject soon engaged the attention of Napoleon, who was so sanguine of his project, that the celebrated Chaptal was dismissed from the ministry of the interior in 1804, because he did not enter sufficiently into it in his report on the subject. (Dict. des Ministres, par M. Gallois, 1828, p. 93). In 1808, the sirup of raisins (which however had been previously indicated) was discovered (as the French say) by M. Proust. But up to that period these inventions had little success. Lord Blayney, who passed some time in France as a prisoner of war on parole, thus describes the result, under the date of 1811. 'Sugar, of which the French are immoderately fond, they are obliged to forego; for, though they have been amused with the idea of extracting the article from raisins, Beet-root, &c., the produce is only yet to be found in the *Moniteur*, not a grain having appeared in the market. It is true, indeed, a sirup of grapes has been introduced into commerce,

but those who have once made use of it will never be taken in a second time; for, independent of its possessing a very small portion of the sweetening principle, which renders its use as dear as sugar, it contains a powerful acid, that acts most disagreeably on the bowels.' (Narrative of a Forced Journey, vol. i p. 483-4).

"Napoleon complained at St. Helena, that 'the old aristocracy, those enemies to our prosperity, exhausted all their wit in stupid jokes and frivolous caricatures.' (Las Cases, part iii. p. 339). What reason he had for attributing these squibs to the royalists in particular does not appear. Two of them are described by Lord Blaney at the same place in his narrative as the former extract. 'One represents George the Third and Napoleon on opposite sides of a table, with a cup of coffee before each; our king is dissolving the point of a great loaf of sugar into his, while Nap. is grinning most horribly in trying to squeeze a drop of sweetening from a large Beet-root. A second caricature on the same subject shows how deeply the French are interested in it; it represents the king of Rome sucking a Beet-root, making wry faces, and exclaiming "Voilà un joli moreau de sucre que mon papa m'a donné." (p. 485.)—(Here's a jolly lump of sugar my papa has given me.)

"Nevertheless, the process continued, and other modes were adopted along with it, which have been called inventions, although, when compared with the passage quoted from Neumann, it will be seen that they were only copies. In 1810 sugar was made from the maple-tree, and the prince of Auersburg set up a manufactory of it. In April, 1811, the impulse given to the culture of Beet-root in France had extended itself to Germany; and on May 25, Napoleon ordered 32,000 hectares of land (about 64,000 acres) to be devoted to it for making sugar. October 22, Guerazzi, of Florence, succeeded in extracting sugar from chesnuts; and in November the fabrication of the article from Beet-root, by Achard, was announced as being brought to perfection. In December it was extracted from meal, and from the arbutus. On Jan. 2, 1812, Haüy certified that the crystalline forms of Beet-root sugar were the same as those of the cane.

"While scientific results were so favourable, poetry was not silent. For instance, at the birth of the king of Rome, M. Michaud, the celebrated Academician, contributed to the numerous congratulations some stanzas, in which he boasts that at the signal given by a hero a new Flora ('une Flore inconnue') has appeared in the forests of France, and that the honey of America ('le miel Americain') will grow in her furrows. His note on this stanza is,—'S. M. l'Empereur vient d'encourager la culture des plantes que peuvent suppléer à l'indigo, à la cochenille, à la canne de sucre, etc.' By *forests* he means particularly that of Fontainebleau, which was devoted to the experiment.

"The subject is thus noticed by Alison in his History of Europe: 'Beet-root was largely cultivated as a substitute for the sugar-cane, and, though the saccharine matter obtained from that useful vegetable was inferior in sweetness and richness to that which the West India islands yielded, yet it was superior in clearness and delicacy, and, as a native production, was justly admired.' (Vol vi. p. 396.)

"Napoleon asserted that the French nation were indebted to him for the cultivation of sugar, indigo, and cotton. (Las Cases, part iii. p. 338.) He enumerated among his treasures 'funds accumulated to establish upwards of 400 manufactories of sugar from Beet-root, for the consumption of part of France, and which would have furnished sugar at the same price as the West Indies, if they had continued to receive encouragement for only four years longer.' (Ibid vi. 251.) But Lord Blaney, who paid some attention to the subject, ascertained that it was not so successful as the emperor wished it to be thought. 'The Duke of Reggio (Marshal Oudinot) in order to please his master and ruin Old England, almost ruined himself by speculations in the preparation of Beet-root sugar.' (Vol. ii. p. 260.) When his lordship visited the building, at Bar in Lorraine, where the works had been carried on, it was converted to rearing cattle of the Dutch and Flanders breed, 'fattening on the Beet-root planted to make sugar, for which it seemed to be much better calculated, and is besides said to give the meat a delicious flavour.' At the Restoration, when West Indian sugar could again be procured, the home manufacture declined. M. Peignot (the eminent bibliographer) in his

'Précis Chronologique de l'Histoire de France,' 1815, a work not written in an anti-Corsican spirit), says significantly, 'La découverte du sucre de betteraves au 19^e siècle n'a pas en le succès qu'on en attendoit et qu'on faisoit espérer.' (p. 146.) The following stanza, in a ballad of M. Menetrier's, on the accession of Louis XVIII., affords even a stronger, because a popular, evidence of the decline:—

"Qu'il naisse fille ou garçon,
Les parrains, faisant les braves,
Pourront offrir au poupon
En confiture et bonbon;
Bon, bon, grâce à Bourbon,
Plus de jus de betteraves;
Bon, bon, car un Bourbon
Est toujours bon.*

"On Nov. 22, 1814, foreign refined sugars were prohibited in France, which indicates the desire, with the returning opportunity, of promoting colonial interests. Finally, in General Ambert's pamphlet, 'De l'utilité des colonies par la France,' 1822, which advocates particularly the exclusion of English sugar, there is no obvious allusion to the subject of Beet-root, &c., a silence which betokens that the sugar-cane had resumed its place.

"M. Achard died in 1821, having seen the fall of his experiment as well as its rise. What new prosperity may now attend it, under circumstances of competition, instead of compulsion, is an interesting question, the solution of which must be left to time, and awaited patiently."

We think that J. T. M., scarcely awards to M. Achard his due proportion of merit for his researches and efforts to establish this manufacture, for we find that "in 1799 he published the first of a series of works on the subject of the production of sugar from the Beet-root, entitled 'An especial Description of the Mode in which the Culture of the Beet-root must be managed in order to increase its Saccharine Matter, and to render it profitable for the manufacture of Sugar,' Berlin, 8vo. Marggraf had, as early as 1747, drawn attention to the fact that the Beet-root or Mangel-wurzel was capable of producing sugar, and had made known a process by which it might be procured. Achard improved Marggraf's processes, directed his labours to the cultivation of the Beet, especially the species that might be most usefully employed in the manufacture, and drew attention to the subject as affording a means of increasing national wealth. At first the subject did not excite much attention, and a report unfavourable to the adoption of this mode of obtaining sugar was made by the Institute of France. The King of Prussia, however, granted to Achard a small estate at Kunema, near Breslau, in Silesia, where he carried on the cultivation of the Beet-root, and the making of sugar, and, in 1812, established a school for the purpose of teaching the art of making this kind of sugar. Although the Institute of France had reported unfavourably on this subject, the 'continental system' of Napoleon threw the French so much upon their own resources, that they extensively adopted this mode of obtaining sugar. In 1829, France produced upwards of 10,000,000 pounds of Beet-root sugar, and the manufacture was then increasing; but the protection that ensures the success of such a branch of manufacture, in Europe can only be given at a great loss to the community.

"The remaining works of Achard on this subject are—'Proofs of the Possibility of extracting Sugar from Beet-root,' Berlin, 8vo., 1800. 'How ought the Manufacture of Sugar and Brandy from Beet-root to be conducted so as not to diminish the Customs?' Berlin 8vo., 1800. 'Instructions on the Mode of cultivating Beet-root for making Sugar. Breslau, 8vo., 1803. 'On the influence of the Manufacture of Beet-root Sugar on Domestic and Rural Economy.' Glogau, 8vo., 1805. All his works are in German."

SHANGHAES AS NURSES.

I HAVE read about Shanghai hens being good nursing mothers, but, as I have seen nothing about the cocks being good nursing fathers, perhaps mine is one by himself; but I

* The point of this verse is, that now parents can give their children real sweetmeats and bonbons, and, "thanks to the Bourbons, no more juice of the Beet-root."

should like to know whether any of your readers have seen the like. As soon as my first hatch of chickens were a fortnight old, you may have seen him brooding them for hours, in the day time, as well as ever you saw a hen brooding them. In one week more the hen began to lay, and, I suppose, he then thought she had something else to do, so he took them to the nest at night, and left her to sleep where she liked; and till such times as the next hatch was ready for him, he took them there every night, as well as every time there came a storm of rain; indeed, taking as much care of them as any hen in England would have done. I thought I should not have had his services as nurse to the next hatch, as he was so fond of the first, but I was mistaken, for he has made no distinction of chickens; and is now as careful of the second lot as he was of the first; and I can take them from under him, or put them under him, just the same as you could with an old hen that has just hatched, and I should not be afraid of trusting him with a brood of chickens just delivered from the shells.—THE POOR MAN'S WELL-WISHER.

CONSUMPTION IN SHANGHAE FOWLS.

ALL animals, natives of warm climates, are more or less subject to consumption, or ulceration of the respiratory organs, when brought to this country. The Shanghae cocks are not exceptions, but it is rather singular that we have never seen the same disease apparent in the hens.

When a Shanghae cock is observed moping, dispirited, and the tail hanging down, though the appetite at first is not affected, we have seldom been deceived in concluding that he was diseased in the lungs. In such case there is little chance of saving the bird's life; weakness, despite the most generous diet and cod-liver oil, continues to increase, though but slowly; diarrhoea comes on, the bird loses the use of its legs, and death soon follows.

We have known instances where the bird lingered on for nearly three months, until wasted to a mere skeleton. One especial symptom is the dullness and departure of all glossiness from the surface of the feathers.

One bird that thus died, and after exhibiting all the preceding symptoms, was examined, after death, by F. J. Butler, Esq., surgeon, Winchester. The following is his report:—

"Body much emaciated. Upon the left thigh was a hard, moveable, conical tumour, confined to the skin. Upon laying open the abdomen, a large, solid, light-coloured tumour, as large as one's fist, presented itself, filling up the cavity of the pelvis, and exhibiting an uneven and undulated surface, adherent to the peritoneum and intestines. On cutting into the tumour, it displayed a firm, dense, cheesy mass of uniform structure, and appeared to have had its origin in the peritoneum, becoming adherent to the intestines and adjacent parts by the inflammation which it excited. At one point, the mucous, or lining membrane of the adherent intestine, had ulcerated and given way, thus producing insuperable diarrhoea and exhaustion. The lungs were also studded with tubercles of a similar character, though not in an advanced or softened state; a small tumour also exhibited at the upper part of the chest. Upon examining sections of the above deposits under the microscope, they presented a uniform granular mass, with a total absence of cells, showing them to be of a genuine tubercular or scrofulous nature, and, probably, the result of hereditary transmission, called into development by some physical or external circumstances, such as an excess of gallantry, cold, damp situation, &c.

"It would be interesting to ascertain whether the stock from which this bird was descended are healthy and long-lived, and if his immediate relatives are given to early death, as this was a confirmed, though complicated case of consumption, and past all redemption. The only thing to be done under similar circumstances, would be, upon observing the first symptoms of drooping, to remove him from the hens, of which, when young, he ought to have but few, say three; keep him moderately warm and dry, and give cod-liver oil three times a day, mixed with meal or ground rice."

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

CHICKENS POISONED BY GRUBS (J. T.).—The grubs forwarded are those which are bred, and pass the first stage of their existence, in the night-soil of garden closets. At this period of the year they come forth, and pass into the second stage, that of a chrysalis, from which the perfect insect issues. Your chickens have doubtless picked them up, and have been poisoned by them; another proof, if one were wanting, that substances of a putrid and offensive character are injurious to the health of poultry.—W. B. T.

POTTING AZALEAS (Dan).—These, healthy and filling the pots with roots, will no doubt harden at the points in a fortnight or three weeks, and, in the circumstances, it would be better to give them a small shift then. A large shift after the first of August, though it would not prejudicially affect the plants if well managed, would certainly affect the bloom next spring. Keep rather shaded for a fortnight after shifting, and then expose more to the sun, to finish the thorough consolidation of the buds, while the roots are getting a little fresh pasture.

GIVING AIR TO A VINERY (Ibid).—"Which is best, a sliding sash in a lean-to roof, or a sash in the upper part of the back wall?" The first will be best if the house is to be at all early, as thus the air will be somewhat heated by radiation from the glass before it enters the house. For a late house it will signify less.

LEMON BALM WINE.—J. F. is greatly obliged for the kindness of the Correspondent furnishing the recipe. It is presumed the "Lemon Balm" is the *Melissa officinalis*, or Garden Balm. For any one, but especially for invalids, some tasted last season was very good indeed.

ARCHANGEL PIGEONS (A Constant Reader).—These birds do not appear to be more subject to diarrhoea than pigeons of any other varieties. But when they are suffering from an attack of this nature, we should advise the placing some chalk in their water, and an allowance of hemp-seed.—W.

HERACLEUM GIGANTEUM.—T. M. W. says—"At Vol. VI., No. 143, page 209, you mention having seen a very large plant of this species at Maldon. I have one which I think exceeds it: it is more than eight inches in circumference at the largest part, and is very near, if not quite, nine feet high, in full bloom. It attracts much attention from those who are strangers to the plant. I have several which have not borne any blossom; it is their second year. Will they bloom at all in future, or not?" Yes; most probably next year.

BEE HIVES.—H. T. says—"I use Neighbour's Cottage Hives. About a fortnight ago, to give more room, I joined on, as a side box, one of Taylor's Bar Hives, which had been used last winter. The bees took possession, and appeared to be doing well. Yesterday I looked at them, and found the box full of dead bees; I should say the hoard was covered upwards of an inch thick, quite equal in quantity to a large cast. Can you account for this? I cannot. I allowed no opening, except through the hive, and that was about two inches wide by half-an-inch high." Had you used Neighbour's hive in the manner intended by the inventor all would have been well. The bees died from suffocation.—J. H. P.

BEE IN BAR HIVE.—A Country Rector asks—"Can anything be done to make bees build in the frames of a Bar Hive? I have boxes fitted with frames, but I cannot make the bees build on the frames. Neither can I make them take to the hell-glasses. They work capitally, and go in in scores, laden, but they deposit their load somewhere in the already-filled hive, not in the glasses. What can I do?" A few pieces of guide-comb nicely fixed upon each bar, or frame, and in the bell-glasses, never fail to induce the bees to commence working in them.

BEE-KEEPING.—Another Country Rector says—"I have only this year commenced bee-keeping, otherwise I should probably know how to act. A stock, which I had thought too weak to survive the winter, swarmed on June 21. Yesterday (July 2), a second swarm came off. The first swarm was hived in a box of tolerable dimensions, and are working very well, but the bees are very weak in number: ought I not to unite them with the second swarm? The original stock is very light; would it not be advisable to put all three together? The further question I have to ask is, What about the queens? Should I fumigate the second swarm

and the old stock, extract the queens, and unite them with the first? Or should I *drive* all the bees, queens and all, into one hive, to fight it out for themselves? With regard to fumigation generally, how long are the bees, when once stupified, under the influence of the fungus? And does the open air revive them immediately? Also, how ought one to go to work to find the queen; for, among 15,000 or 20,000 bees, it is easy to overlook one; and if the bees are soon revived by the fresh air, they may be all buzzing about before her majesty is discovered? I suppose the hive of stupified bees ought to be turned over on a large white cloth, and the bees spread out and searched over till the right one is found. Under these circumstances, the questions I have to put is as follows:—1. Whether the three stocks should be united, or only the two swarms? 2. Whether fumigation alone should be resorted to for the purpose of extracting the queens? 3. If so, the readiest mode of discovering the queens?" You should have joined your second swarm to the first on the day it swarmed; it cannot be done now. Or you might have placed the swarm in the place the old stock stood immediately upon its being hived, and carried the old stock to a distance, then no second swarm would have left it; as it is, they must remain as they are for some time, at least. Full directions for joining swarms, and casts, queen, &c., have been given repeatedly in *THE COTTAGE GARDENER*. The time that bees remain torpid under the influence of smoking fungus depends upon the kind used, the quantity, and the time they are exposed to it.

WOOLICE (E. P.).—Lime will not drive them away, nor destroy them. You will have seen what we said about them last week.

WARD'S CASES.—If you write to Mr. Appleby, Victoria Nursery, Uxbridge, he will give you all the particulars you need. We cannot recommend dealers in anything.

BLACK FANTAIL PIGEON (H. C. J.).—The cock of this breed falling helpless whenever he attempts to fly is probably paralyzed from the oozing of blood from a ruptured vessel of the brain. If this be the case, the only chance of his recovering is by keeping him quietly confined by himself, and feeding him moderately for some time. We shall be glad of any information from you relative to the *Roup*.

FRENCH GARDENING (Viator).—It may be true that our neighbours are behind us very far in some branches of gardening, especially, as you observe, in the culture of Strawberries. It is not the fact, however, as you infer, that they have not improved at all for "more than two centuries." So far from this being the case, even in remote parts of France, that we will quote one out of many evidences to the contrary, from a recent number of the *Revue Horticole*. It is there said, "Vegetable culture at Roscoff dates a long time back. In the year 1600, pretty good onions, artichokes, and asparagus were produced there. In the early part of the 18th century, a French naval captain, M. Habasque, brought from Holland some brocoli and cauliflower seed; some were also received from England at the same time. The cultivation of vegetables then began to increase, though not in a very extraordinary degree; but within the last twelve or fifteen years it has increased prodigiously, and continues to do so. Twenty-five years ago the half-hectare of ground for vegetable culture let for 25 francs, which at the present time lets for 200. The Roscovite not only cultivates his vegetables for himself, but sends them into both the French and English markets."

RECENTLY REMOVED VINE (A Novice).—The gardener who advised you to pour half a pail of water containing two-thirds of a pint of guano, over the soil above the roots of your Vine, led you into the error which Mr. Fish warns "novices" against to-day. Your Vine, you say, started well, but then suddenly ceased to advance, and the half-opened leaves are now withering. The check came so soon as the strong liquid-manure reached the roots. If the Vine is not actually killed, the best chance to save it will be to dig out all the soil from above the roots, and put in some light turfy loam without manure of any kind.

TWO EGGS IN A DAY.—C. W. M. says—"Having read in "The Poultry Book," and several numbers of your periodical, cases of Cochin-China hens laying two eggs in one day, of which many are still doubtful, now I have only one cock and hen; the hen laid two eggs last Wednesday, and has laid every day since. She laid one egg early in the morning, and at one o'clock was again on the nest, and I removed her, and found a perfect egg just laid under her. I can positively assert this as a fact, being the only hen I have."

PLANTS IN AN UP-STAIRS ROOM, AND IN THE TOOL HOUSE OF A MILL (A Clerk), see p. 132.—We are pleased, but not surprised, you have succeeded so well, as it merely illustrates the old adage, "Where there is a will, there is a way." In ordinary seasons, we still think you could keep all such things in such a room in winter, by keeping the

plants in the centre of the room when severe frost came, and covering them there with cloths, and keeping the window-shutters close at night; more especially, if, when very severe, you added a couple of stone bottles filled with water as hot as they would stand it. The tool room in the mill, however, having a skylight, and a hole in the wall with a moveable board for air, will be a good auxiliary, provided you can keep it cool enough. You say, that from the steam-pipe passing through it, it now averages 80°. You will not succeed well with these plants in winter, unless you can reduce it as low as 50°. This you could easily do if the skylights opened more than one inch, as the hole in the wall would give a nice circulation. Place the shelf more rather than less than a foot from the skylight, if you can. Make as little dust as possible in the room. If you require to admit much air in cold frosty weather in winter, put pans of water, or a damp woollen cloth over the steam-pipe, or the atmosphere will get too dry. If you can keep down the temperature by such means, the plants may be moved there by the end of October; if you cannot do so, you had better try some stove plants, such, as for instance, *Ferns* and *Mosses*, as are now being treated on by Mr. Appleby. See answers on "Engine House Gardening." We know of no means of lowering the temperature without giving air, unless you went to the expense of surrounding the steam-pipe with wood, or some other non-conductor of heat. If a body of air was enclosed between the pipe and the non-conducting substance, it would be still more effectual. You might thus manage the temperature to what you liked with a little trouble.

LIST OF HARDY PLANTS (H. C.).—We have given judgment over and over again on your suggestion, which, if we were to comply with, you would, as likely as not, be the first that "a list" would puzzle, and the second to complain against the best that could be constructed. There is not the least difficulty in filling whole pages with the names of plants that flower in any of the summer months. What then? No two agree about the value or beauty of nine-tenths of them; and who is to make the selection? Suppose you would select for yourself, say twenty kinds, out of nine-hundred plants in our list, that would flower between the spring bulbs and the Roses; or suppose we selected the ten best, *in our opinion*, for you; there would be just twenty chances against your having suitable plants, or ten chances against the high opinion you now entertain of *THE COTTAGE GARDENER*. "When shall we have done with Cochin fowls?" We can only answer, when they cease to form so generally interesting a part of our domestic economy.

MANY QUESTIONS (M. F.).—A bed for *Pinks* should be eighteen inches deep at least, and filled with good loamy soil, such as would grow barley or cabbages. The *Early Tulips* and *Turban Anemones* are best for the Verbena-bed. We approve of your planting, generally, and No. 12 we would plant with the *Everlasting Tree Carnations*, and a row of alternate white and dark *Cloves* all round them, to suit No. 5; and for the spring crop we would use the varieties of *Polyanthus Narcissus*, and leave them in the bed all the year round. The white flower you sent is not a *Campanula* at all, nor anything like it. There is nothing among the ordinary *Phloxes*, *Penstemons*, and *Saponarias*, that will not flower next year from seeds sown now "upon an old spring hotbed," but lose no time, and do not ask for novelties in any of the families.

THRIPS (Tyro).—If you had given sufficient ventilation, and kept the air of your melon pit thoroughly and regularly moist, you would not have been so overwhelmed by this pest. Try dusting the leaves completely and repeatedly with Scotch snuff; and keep the air moist.

GOOSEBERRY CHAMPAGNE.—*Champagne* will be much obliged to any of our readers who will send us an approved receipt for making this wine.

FRUIT IN POTS (A Subscriber, Cheltenham).—If your *Apricots*, *Peaches*, and *Nectarines*, in pots, two years from the bud, have gross laterals, continue to pinch the most consequential of them at intervals of a week or so. If they are weak, let them ramble until the middle of August. Your business is twofold—to equalise the distribution of the sap to the young wood; and to get the wood highly solidified. Your pinching, therefore, must be done in due order.

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WEEKLY CALENDAR.

M D	W D	JULY 28—AUGUST 3, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
28	TH	Rosy Minor; Norfolk.	30.064—30.025	77—59	N.E.	—	20 a. 4	53 a. 7	11 24	22	6 9	209
29	F	Lover's Knot; Kent heaths.	30.054—30.034	74—47	N.E.	08	21	51	11 44	23	6 8	210
30	S	Large Emerald; woods.	30.070—30.038	76—46	W.	—	22	50	morn.	24	6 6	211
31	SUN	10 SUNDAY AFTER TRINITY.	30.072—30.038	81—54	W.	—	24	48	0 11	25	6 3	212
1	M	Swallow-tail; meadows.	30.037—29.937	82—52	S.W.	—	26	46	0m43	26	6 0	213
2	TU	White Bordered; woods.	29.861—29.662	81—49	W.	—	27	45	1 24	27	5 56	214
3	W	Speckled Wood; wood sides.	29.464—29.268	71—47	S.	03	28	44	2 17	28	5 52	215

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 75.1° and 52.8° respectively. The greatest heat, 92°, occurred on the 1st in 1845; and the lowest cold, 38°, on the 3rd in 1847. During the period 94 days were fine, and on 88 rain fell.

As many of our readers may not be acquainted with that most interesting evergreen, the Darwin Barberry (*Berberis Darwinii*), it being of recent introduction, we will introduce a few of its characteristics to their notice.

In the first place, we can assure them that it is as hardy as a Holly, not only with regard to mere temperature, but adaptability to awkward circumstances in regard of moisture, &c. We think we are warranted in affirming this, from the fact that we had, amongst a stock of rooted cuttings, plunged out-doors, one in a five-inch pot, which, unknown to us, was in a state of utter stagnation all the winter, the soil having been soured through derangement of the drainage by worms. This plant looks just as well as any of the rest, and thus warrants the idea that it possesses much hardness of constitution.

As to soil, it thrives admirably in loam and peat, but we have little doubt that any sound soil would suit it; but burning sandy soils we should be disposed to fear.

The first feature we would point to in this beautiful shrub is the delightful green of its foliage. In this it is not excelled by the best coloured Holly. And not only is the green good, but exceedingly permanent—no disturbing causes, as drought, variations of temperature, &c., seem capable of affecting its delightful tone of colour. A second point, is the singular persistency of its foliage, scarcely excelled in this respect by the *Araucaria imbricata*. At this time of the year our Holly hedges are a complete pest, from the continuous shedding of their riper foliage; and this, in the immediate vicinity of dress grounds, is a source of much annoyance to a gardener, who, with the most ambitious desires as to “keeping,” cannot keep pace with his desires.

On our *Berberis Darwinii*, now nearly four feet high, and more in circumference, we have as yet detected only one yellow leaf in the present summer. The individual and collective effect of the foliage is of the most handsome character imaginable; a bush studded with thousands of leaves in a very narrow compass, and yet no apparent confusion—no two leaves appear to touch, at first sight.

But there are yet other merits pertaining to this charming evergreen, and those of no mean character. Let those who have not become acquainted with it fancy that to the preceding qualifications must be added the most beautiful blossoms, which droop out of every axil. An enthusiastic admirer of the beautiful in the vegetable kingdom, if tolerably imaginative, might fancy it, when in full blossom, a little diminutive vine from the antipodes, with evergreen foliage and diminutive branches of golden fruit; for the richly gilded blossoms carry a cupped or globular appearance, suspended from curved racemes in true grape style.

Come we now to another qualification, which, although for the present somewhat uncertain, will, we think, be found correct. We allude to its peculiar eligibility for making miniature hedges around, or in the vicinity of flower-gardens, or highly-decorated spots near the mansion. Admirably adapted, we should say, for those little divisions necessary in the immediate vicinity of the villa. Indeed, it is our opinion that this excellent evergreen will come into very general use as an ornamental hedge-plant. It has all the essentials for a hedge of the above description—the most handsome and neat evergreen foliage of a long-enduring character; a beautiful habit of blossoming annually, at least, and that habit quite reconcilable to the use of the shears, as we will hereafter show; with a constant disposition to throw up fresh shoots from the collar. Together with the persistency of its beautiful foliage, we may name the singular propensity it possesses of sustaining an undiminished strength and verdure in its lower branches, in defiance of the threatened monopoly of sap by the collar shoots: hence another important element of the fancy hedge. As a mere border-bush, however, it is exceedingly valuable; and we need hardly point to the value of such acquisitions in small gardens, where “much in a small place” must be the motto.

To advert here to its eligibility for training on walls, pales, or trellage, especially where a fine evergreen foliage is requisite—say in suburban gardens—is to hint at a matter which, from the former allusions to its habits, must be obvious to our readers.

To conclude the list of its merits, we may add, that it may be slightly forced, although somewhat impatient of high temperatures. It may be classed with such things as *Weigelia*, *Forsythia*, *Deutzia*, *Jasmines*, &c., and, with such, constitute a special branch of floral culture.

This fine evergreen was introduced from Patagonia by that spirited firm, Messrs. Veitch, through their collector, Mr. Lobb; and to these eminent nurserymen the gardening world is under no small obligations for this and many other most valuable acquisitions.—E.

On the 6th of July took place the annual letting of Mr. Jonas Webb's Tups, at Babraham. Although the attendance was not larger than usual, the prices realised were much higher. One Tup was hired by Mr. Roche, an American agriculturist, for the unprecedented sum of one-hundred-and-thirty guineas. The number of Tups let were 71, and they netted £1580, being an average of £22 5s. Previously to the commencement of the sale, Mr. Webb put a reserved price upon each lot; and it is an honourable testimony to his judgment and moderation, that in every instance, high as were the reserved prices, the biddings exceeded them.

COVENT GARDEN.

It has no doubt been observed in other markets, as in this, the very inferior quality of the summer fruits, particularly Cherries and Strawberries, which have been produced this season. The want of sun, and the heavy and continued rains, have contributed towards such a state of matters. Notwithstanding the large crop of CHERRIES, and the abundant supplies, there are very few of them that are worth eating. They also come in very bad condition—being so much exposed to wet before being gathered they are very much damaged in the carriage. The sorts that are most abundant are *Bigarreau*, *Mayduke*, and *Kentish*. There is also another variety called the *Flemish*, which is so similar to the *Kentish* in the fruit that they cannot be told apart; but the habits of the trees are quite distinct—the *Kentish* being nearly twice as large, when fully grown, as the *Flemish*, and the fruit being fully a week or ten days earlier. It is by some supposed that the *Flemish* is the same as a continental variety called *Gros Gobet*, but no two varieties can be more different. The prices Cherries are now making in the market are 6d. per pound, but where the finest fruit are picked out, as is generally done, and made into a different sample, they make as high as 1s. and 1s. 6d. per pound. STRAWBERRIES still continue a good supply at the former quotations. The *Elton Pine*, which is one of the latest varieties, is now plentiful. Ripe GOOSEBERRIES are also plentiful, at from 4d. to 6d. per quart. CURRANTS, both of Red, White, and Black varieties are very plentiful, the latter not so much so as the two others; they make from 2s. 6d. to 3s. per half-sieve. PEACHES and NECTARINES are very fine, at from 10s. to 20s. per dozen. Foreign PINE APPLES are common, and of good quality; they make 1s. 6d., 2s. 6d., and 3s. 6d. each. GRAPES of home growth are excellent, at 5s. per pound. Some, however, of inferior qualities, may be had at 2s. and 3s.

VEGETABLES are abundant, and of good quality. Cabbages make 6d. to 1s. per dozen. Kidney Beans are 1s. for a two-quart measure. Cauliflowers, 2s. per dozen. Green Peas, 2s. 6d. per bushel. Potatoes, 8s. per cwt. Lettuces, 8d. to 1s. per score.

The Potato disease has appeared with as much if not greater virulence than for several years past. We have seen, in Essex, Cambridgeshire, and Kent, hundreds of

acres completely gone, and poisoning the atmosphere for several miles along the roads. We never recollect, at such an early period of the season, meeting with it so bad as it appears to be now. H.

HORTICULTURAL SOCIETY'S EXHIBITION.— JULY 9TH.

Now for the more common things that were shown, and what reflections, observations, and suggestions they drew forth from us this time; for I had the assistance of some of the highest heads on the turf that day.

Collections of African, or *wild species of Geraniums*, have had a short life of it, only one collection being exhibited this season, but by a new competitor, Mr. Bragg, of Slough, who sent *G. bipinnatifidum*, *fulgens*, *Blandfordianum*, *ardens major*, *glaucum*, and *glaucifolium*, the poorest of the lot—black petals edged with greenish yellow, a very common form and colour at the Cape. The contrast between *glaucum* and Mr. Henderson's seedling from it by the old *grandiflorum*, now called *Glaucum grandiflorum*, shows the wisdom of persevering with the wild species to get new strains. This new cross will give an entire new class of bedding Geraniums, for I saw *Glaucum grandiflorum* in seed, and with abundance of pollen, and I have said already that *Countess* is the best to cross with it. There is now a better chance with these two than any other two Geraniums whatever; and I would recommend every cross-breeder to get the two this season, and I would also recommend neither of them to be touched with the pollen of a large-leaved Geranium. *Countess* is the work of years, by these very fingers, to get into a small leaf strain for beds; and the flower is all but white. The grandmother of *Countess* (*Flora*), I think, is at Kew Gardens, for I sent it there; and it is as near the flower of *Glaucum grandiflorum* as can be. When a perfectly white flower is established in this strain, and all the dark colours are bleached out by three successive generations of selfs, or white seedlings not crossed, is the proper time to turn to Africa for a long lost strain on the part of the florist—I mean *fulgens*. Set *fulgens* on to the pure white seedlings, and the first cross will be a new strain that has never yet been seen in Geraniums, and which no other two plants in the whole family are so likely to produce as the issue of *Glaucum grandiflorum* and *Countess*. As individual flowers, the two are of very little account, compared to what they are capable of doing between them under judicious management. Mr. Fleming, one of our best authorities in flower gardening, is of the same mind with me about these crosses, and also about Mr. Jackson's new white Pelargonium, which ought to be called the *White Oleander* Geranium; and he also agrees about Mr. Salter's way of growing and training *Fuchsias*—three of the best hits which the medals have brought out these three years, always excepting new plants, and Mr. Appleby's standards of *Deutzia gracilis*, which, although too weak in the stems yet for some of the judges, will soon become not only great favourites with terrace-garden people, but the very patterns which many growers will have to imitate with many more plants that are now caricatured among specimen plants.

There was a new dwarf *Pitcher plant*, called *Hookeriana*, with eleven large brown pitchers, apparently a very good thing; also a new white *Brassavola*, with narrow sepals, and a large cupped lip. The large *Vanda Batemanii* had eleven flowers open, and *Phaius albus* with eighteen flower spikes. This plant may be wintered as dry as *Achimenes*, and in the same way; and if the stems are cut into joints in the spring they will

propagate, like Vine eyes, to an infinite extent, and so will *Dendrobiums*, and, no doubt, all the Orchids with stem-growth, when the stems are jointed; but this new way of propagating Orchids must be after the plants have had a long, dry rest. Here we see that Orchids, like Geraniums, have invisible buds at every joint, from which they will increase just as well as if the buds were as prominent as those of the Vine or Rose.

There was a singularly curious Swan-neck Orchid (*Cynoches*), with two long spikes of greenish flowers, after the manner of *Gongora*, but it was of no beauty as a garden plant. Another very curious Orchid, but more handsome, is *Dendrobium filiforme*, the flowers of which are not much bigger than a gnat's head, being set in two rows along thread-like spikes of ten to twelve inches, and hanging down gracefully on all sides, while *Bolbophyllum Henshalli* has cream-coloured flowers, produced singly and quite at home.

ROSES.—There were no pot Roses this time, but immense quantities of cut flowers, and they had a new way of showing-off some of the best, as *Geant des Batailles*, *Paul Ricaut*, a fine dark Rose, *Chenedole*, *La Reine*, and *Coup d'Hebe*. Of these, there was a box devoted to one kind of Rose only, and the effect was really very good; the plan is well worth encouraging. There was a lovely Rose, new to me, called *Auguste Mie*, a new hybrid perpetual, of a blush-rosy hue, and very large. It is certainly very distinct, and well worth having. *Pio Nono*, again, is an excellent newish Rose, and I can vouch for its being most constant. There are some excellent Rose-gardens within my reach, perhaps the finest in England; at any rate, I shall give an account of one of them next week, which I am quite sure will surprise some of us. A Gallic, or summer Rose, called *Ohl*, is another splendid dark Rose, finer, if any thing, than *Boule de Nauteuil*. This, and the very curious *Compte de Montalivet*, perpetual Rose, I never saw exhibited before. A Bourbon Rose, called *Cezarine Souchet*, is very much out of the common: a kind of pale Rose, but, like *Auguste Mie*, it must be seen to know the real tint. And, last of all, there was a Moss Rose, called *Princess Alice*, a tightish thing, but I did not think much of it.

I have a word or two to say about the new perpetual Rose *Victoria*, of which I spoke so highly from the June show; it is not at all such a good white as I took it to be, and if the pot culture does not alter it altogether, I am not a gardener. Out-of-doors it is as red as *La Reine*, in the bud, and as rosy as the old Cabbage Rose when it first opens; and it is only when it is far gone that it turns white. I have watched this Rose in two first-rate collections, and seen it in Mr. Jackson's nursery, and that is my second thoughts about it. Surely, they did not cook it for the exhibitions?

PELARGONIUMS.—*Dobsonii* was the newest to me, and the most marked kind among all the dark ones. It is splendid, and beats *Optimum*. The front petals are of a dark purple-crimson, a small, shaded, light eye, and the back petals black, with a fiery ring along the outer edges. *Alibi*, by Mr. Turner, is also a splendid orange-scarlet; after them I noted the following:—*Magnet*, *Prince Arthur*, *Salamander*, fine scarlet; *Alonzo*, dark purple; *Constance*, very showy; *Mont Blanc*, *Star*, *Magnificent*, *Virgin Queen*, *Eliza*, *Annie Laurie*, rose front, white eye, and dark back; *Celia*, orange-scarlet; *Exactum*, half white; *Esther*, half white also, but very different from the preceding; *Plantaganet*, dark purple; and *Optimum*, the next to *Dobsonii*. Add to these, *Jupiter*, *Ambassador*, and *Ganymede*, and you have the cream of the non-florists' flowers of all that were exhibited that day. I failed to spy out *Zaria*, which I regret; and I missed *Basilisk*, and one or two more, all the season.

Among FANCIES, I marked none this time except one or two seedlings; and to let you see how diamond cuts diamond, the *Cloth of Silver* is called in my notes "a lovely queen fainting away in a ball room:" then, if a queen is not better than another mortal in a fainting fit, this new queen will not stand three years' hard rubbing in this wicked world (see page 283). *Constance* is pretty fair, after the fashion of the *Hero of Surrey* group, but not nearly so good as some others in that section; and one called *Panorama*, from the sweet-leaved breed, is not to be compared to seedlings of the very same breed common enough in 1825!

BEDDING GERANIUMS.—There were some beautiful new varieties of these. *Eliza Field* is a real beauty—a horse-shoe leaf, and a little more pinky than *Boule de Nieve*, and yet not a real French-white. *Princess*, the same breed, with the shade next to salmon-colour; and *Kingsbury Pet*, the third shade, something like orange-salmon, if there is such a tint; and one called *Skeltonii* is the same as *Boule de Nieve*. All these, with a seedling of mine called *Shrubland Cream*, which is in the garden of the Society, are all exceeding good pot plants, and they will force in the spring for the conservatory. They are, also, most useful in October and November for in-door plants; and, to my own knowledge, nine ladies out of ten admire them. I took Mr. Fleming to the front of the stage, and, besides backing all that I have just said, he is sure that he, also, must get in all these pretty flowers this very season, also Henderson's (Wellington Road) *Glaucum grandiflorum*, and Jackson's *Oleander Geranium*, *Alba pleno*. I think *Eliza Field*, *Princess*, the *Kingsbury Pet*, and *Skeltonii*, were shown by Mr. Henderson, of Pine-apple Place, but of that I am not quite sure. I think I saw a small plant of *Eliza Field* there last season, but any London nurseryman can find them out for country buyers.

Mrs. Conway sent a collection of *Scarlet Geraniums*, and a variegated Geranium of the *Golden Chain* breed, with a truss as good as *Tom Thumb*, which will beat the *Flower of the Day* and the *Mountain of Light*, if I am not very much mistaken. She, had, also a fine *Purple Petunia*, blotched with deeper colour, a good pot plant; and there was a collection of seedling *Petunias*, of which *Cameleon* and *Prometheus* were the two gayest. There was also a collection of the dwarf *Lobelias*, of which *Ramosoides*, a deep blue, was the best; and in a collection of *Crassulas* (*Kalosantes*) a seedling called *Beauty of Charonne*, is really a good dark crimson variety; and *Coccinea superba* a good improvement on *miniata*, or the sort with the white eye.

In a collection of seedling *Gladioli*, *Rex Ruborum*, a dark crimson flower; *Insignis*, a fine orange-scarlet, as if a cross by a *Watsonia*; and *Salmonius*, a fine orange-scarlet, with three beautiful marks in the front petals, were the best; these were from the Messrs. Bass and Brown, of Sudbury, in Suffolk, and the three are well worth adding to any selection of this tribe.

Relhamia squarrosa, an old-fashioned looking composite-flowering little shrub, in Mrs. Lawrence's collection, is well worth growing for a change. Her *Roellia ciliata*, in a very good condition, is the most difficult plant to grow well of all that were shown this season.

ACHIMENES.—These were select sorts, very well grown. One box of *Picta* was a yard through, with shoots and flowers ranging down over the sides of the box, and the rest a mass of flowers. *Coccinea grandiflora* is the best of the breed, except, perhaps, *Escheri*, which has the flowers more in the way of *Venusta*. *Patens major*, fine, as was *Longiflora major*; *Longiflora alba* very good, but *Margareta* the best white. I objected to that name last year, as it comes too near to the French for China Asters; the name is after one of Mr. Skinner's daughters, and anything from that quarter demands our respect. The best grown specimen was called *Boymanii hirsuta*.

Mr. Salter, of Hammersmith, had his six trained umbrella *Fuchsias* shown again; real beauties; two whites and four red ones; and among the other *Fuchsias*, *Pearl of England* is still the best white, and *Conspicuum* the next best. *Voltigeur*, *Verio*, and *Cartoni*, were the three best scarlets, with reflex sepals and large purple corollas. These three have a close style of growth and slender habit, which render them most graceful. *Orion* is an immense large scarlet *Fuchsia*, and *Don Giovanni* is quite as large, if not larger, but the habit is too strong and loose to be flowered on any system but from very old plants cut in very close every year. The best of these *Fuchsias* were from Mr. Fraser, of the Lea Bridge Nursery.

A small plant of *Gaylussacia pulchra*, with crimson, Andromeda-like flowers, was new to me; and also a *Pentlandia grandiflora*, or some *Cyrtanthiform* flower of that bulbous section I never saw before; the colours are less showy in this than in the older kinds of *Pentlandias*, and there seem but very slight differences in this comparatively new genus from the old *Stenomessons*.

FRUIT.—The fruit-tent was crowded all day, and the judges would have an easier task thrashing in a barn. I never saw such a fine display of fruit before. There was a collection of tropical fruit from Sion House, consisting of *Vanilla* pods, in the shape of long kidney beans, of a dark brown colour; the green kind of the *Papaw-tree* fruit, about the size and shape of lemons. The *Allspice* (*Pimenta vulgaris*), looking like strings of Portugal laurel berries; *Gamboge* and *Rose Apples* (*Eugenia jambos*), looking like cream-coloured medlars; and *Momordica balsamina*, or, what is so called in gardens, *Charantia*, a very pretty toy to hang up in fruit-shops or conservatories. This fruit comes from a slender, cucumber-like vine, is five or six inches long, and half as much in cross diameter, of a beautiful orange-colour, warted all over; it splits when ripe, and the parts roll back against the stalk, showing a high-coloured inside, lined with seeds of a still higher colour; it does not last very long, but I have often caused sudden surprises by it, and no stranger to it could tell what kind of thing it was at first sight. If it could be preserved in syrup, it would make a beautiful dish in a fancy dessert, and as such dishes are seldom ever tasted at table, it would be safe enough: otherwise the whole race of these Cucurbids are suspicious, and some of them poisonous. There was a dish of the purple *Granadilla* (*Passiflora edulis*), which makes a delicious preserve.

Among *Grapes*, there was an entire new kind of Muscat-flavoured, from the Duchess of Sutherland, and Mr. Fleming told me he had it from Mr. Tillery, at the Duke of Portland's, by the half-blasphemous name of *Muscat de Jesu*. It is a middle-sized white berry, like a Muscadine; the bunch is immense, and every flower seems to set well; it has long, loose shoulders, in the way of the *White Nice*, and every shoulder would make an ordinary bunch. The two bunches of it exhibited were from an eye put in last year; and when the vine comes to its full strength on its own roots, ordinary bunches of it are expected to be regularly from four to six pounds in weight, so that they may "cut and come again." I tasted this new Grape, and there is no mistake about the Muscat flavour.

If I had fine, large bunches of *Grapes* of my own, and had the Queen to dine, I would never place them on flat dishes of any kind; I would, in some way or another, show the whole bunch as it hung upon the tree, and no other way. The best thing I know of for setting off grapes at dessert to the best advantage, is a gold or silver vase, eighteen inches high, or higher, and ten or twelve inches in diameter over the top, with a couple of inches just below the rim in open scroll work; the inside of this vase I would fill up to the brim with

something *not to be seen*—a block of wood to fit exactly the inside of the vase is best, the top of it being level; let a row of small vine leaves, or part of leaves, stand up between the top edge of the block and the open scroll work of the vase; they will hide the block from the sides, and be guard leaves to others placed flat on the block; on the centre of the block, place a ten pound *pine-apple*, and a row of *Royal George* peaches round the bottom of the pine, with a row of leaves between them and the *pine-apple*; the block is now full covered, or, if it is not, fringe the outside of it with a row of *dark-coloured* cherries, and then put on the huge bunches of grapes, and no painter could devise a more sumptuous arrangement, as an emblem of the fruit of peace, to set before the allied powers when they make up their present quarrel.

But how are the grapes "put on" after the vase is filled with the pine and peaches? As easily as the said quarrel could be settled. Cut two inches of the vine-shoot with each bunch, get this through the scroll work, and the bunch will thus hang down outside the vase as it did on the tree; put another bunch of the same colour on the opposite side of the vase, and take two more bunches of a different colour, and place them opposite each other like the first two.

There are many other ways of hanging bunches of grapes outside the dessert dish, and of filling up the centre of it, all of which look better than placing them on each other in the usual way; and there is an easier, and even a better-looking way than the vase plan, without gold or silver, or even porcelain dishes. Get two figures of Bacchus, or of Cupid,—those they sell in plaster of Paris will do—and place one before the other, or back to back, as fancy leads, and let as much wood be cut with a bunch of grapes as will reach from shoulder to shoulder of the two figures, and the bunch of grapes will hang down between them as if they were carrying it on a pole. This device, in solid gold, and in plated figures, is now in use in some first-rate families for a "centre piece" on the table. An Admiral would have a three-decker with the grapes and other fruit hanging from or between the masts, and so with other crafts. Two Cupids laughing would do for a wedding dessert.

D. BEATON.

NOTES SUGGESTED BY THE NORTHAMPTON SHOW.

THE Northampton Show has been steadily increasing in resources and influence. From the largest room in the principal hotel, the exhibition was taken to the splendid new Corn Exchange. Even then the committee did not seem satisfied with their success, and the honorary secretary stated he never could do, until thousands, instead of hundreds, saw and admired such gardening productions. I was not surprised, therefore, to find that an out-door exhibition was determined on, to be held in the beautiful, extensive, and tastefully laid-out gardens, connected with the Hotel at the Blisworth Station. Bands of music, and other accessories, were in requisition, and many, for a good number of miles round, were, in anticipation, already enjoying the treat provided for them. Wednesday was a delightful day; and having the satisfaction of seeing some hundreds of happy faces here, I began counting up how much more pleasure I should have on the morrow at Blisworth; but in the afternoon the mercury in the weather-glass absolutely tumbled down, thick clouds began to lower in the evening, and by midnight the rain descended in torrents, continuing to do so, with but trifling intermissions, until far on in the afternoon of Thursday. When riding and railing, it was

rather a dismal sight for July to see grain fields completely laid, rivulets turned into rivers, hay, and new-cut grass carried away by the current, and rich pasture meadows transformed, for a time, into respectable sized lakes. On gaining Blisworth matters were far from mending; the pelting rain invoked no visions of sylph-like forms, without whose presence even floral fêtes would lose their charms. Sturdy Knights of the Blue Apron, drenched, soused, and drenched again, since three o'clock that morning, were cogitating whether they should take their van loads of plants and garden produce home; and the first sight we saw, of others, was carrying some splendid plants from the tents, the low ground around, which, having been turned into a pool, made all hope of showing the plants there an impossibility. Meanwhile, the indefatigable secretary—*honorary* is attached to the title—and, so far as *honorary* is concerned, he richly deserves it, as he has no notion of being a secretary in name—convened a committee meeting; a new, low, unfinished building, intended as a dancing room, was taken possession of; there most of the plants, flowers, and fruit, found *cramming* room; messages were sent along the wires to stop the bands of music, and to postpone the exhibition, and thus, after much energy and exertion, Mr. Appleby, with whom I had previously had some hours chat, and your humble servant, were invited, just about the time the company otherwise would have come, to pass a hasty decision upon the subjects exhibited. I understood that Tuesday, the 19th., was the day agreed on for the exhibition—the hardier plants being kept in the room, and the tender ones in the greenhouse, cut flowers, &c., to be replaced; and now, writing on the previous evening, the 18th., I cannot help wishing that the sun may shine bright to-morrow. Most of the ladies and gentlemen who patronise the Society made a point of calling in the afternoon, and expressed their approval of these arrangements. A few other visitors came in the afternoon, and it was quite as well that the rain deterred others, for want of room would have prevented all opportunity of inspection.

Now, the circumstances could scarcely have been more unfavourable—seldom have we a night and a day, not *dropping*, but *pouring* rain from the clouds in July. Other societies may take notes of warning, caution, and encouragement. The “well alones” may crow; but I have formed a wrong estimate of the men of Northampton, of the gentry who surround it, and the gardeners who send such admirable productions, if the disappointment of Thursday should *necessarily* deter the committee of management from making renewed efforts to bring the refining and humanising influence of flowers to bear upon larger numbers of their neighbours, confident that their own pleasures will be enhanced in the very attempt to place rational happiness within the reach of others. To deserve success is ultimately to command it.

The exhibition, under even these unfavourable circumstances, was allowed to be superior to all its predecessors, and yet several large exhibitors had not appeared, and many present, owing to the morning, had been unable to bring what they intended. Instead of describing what generally appears in the local papers, I will merely glance at a few of the prominent points.

VEGETABLES.—These are always in first-rate condition here, and were nothing behind upon the present occasion. The morning had merely lessened the quantity. The spring and autumn shows are always the most striking in this division, and the cottagers, as a class, do strive worthily for the honours. The *Strap-leaved Turnip* is much cultivated, having upright, narrow leaves, instead of the broad, recumbent ones of the *White Dutch*. A first-rate *Pea* is always in great force, sent out by Mr. Jeyet, named, I think, the *Conqueror*.

FRUIT.—Owing to the reasons specified, there was less variety, and much less quantity, than usual; but what was there was good. Some *Melons* would have led some of our friends to admit that that fruit is worth something more than looking at. The *Raspberries*, the *Falstaff* kind, were splendid; and *Strawberries* were good and plentiful, though only one prize was offered. I noticed two kinds new to me, the *Shadblow Pine*, a middle-sized English fruit, with a superior flavour, and the *Courteenhall*, a fine-looking fruit, with an appearance and flavour something midway, to our taste, between a *British Queen* and an *Eleanor*. We know it to be hardy, a strong grower, and a fertile producer, and Mr. Gardiner says it fares well.

WILD FLOWERS.—Of these there were a number of collections. Two most interesting ones from one person were overlooked—one representing the principal orders in the Natural system, the other the classes in the Linnæan system. The Committee will see that they are duly noticed. I have, at provincial shows, sometimes seen peepings of dissatisfaction about the wild flowers. To prevent this, several suggestions present themselves. The terms for showing should be clearly defined—such as the naming the plants correctly; collecting them in a wild state; gathering within a specified distance of a given centre, and thus giving an idea of the wild flora of that district; giving a preference to the rare and pretty, over the merely beautiful but common; and, finally, if possible, getting a young botanist of the district, who has ranged the meadows, hills, and glens, to assist, in this department, the regular judges. I have known instances of forty and sixty varieties being regularly collected with as little trouble as it would take to get half-a-dozen of good Heartsease, because the exhibitor had a “see-me-not” corner of his own, where the most of them were grown. I rather like the idea of a garden composed solely of British plants; but then it is doubtful if the term “*wild*” could then be properly applied to them.

CUT FLOWERS.—These, in the shape of bouquets and baskets of a defined size, were shown in great force, and always present a fine feature at an exhibition, *especially* if tastefully arranged. Considering the quantity of flowers required, and the time necessary for the work, *extras* should be given here whenever the funds of the society will admit of it. I think that disappointments would be avoided, and the number of exhibitors greatly increased, if the premiums were divided into two classes: *first*, the best and rarest flowers; and, *secondly*, the best arranged to show the shading or the contrasting of colour. The first may be arranged as the second, but then the aim of the exhibitor would be different. Until a revolution in taste and feeling take place, rare plants will too often be judged as the best. The possessor of a greenhouse will, therefore, have but little chance with the possessor of a plant stove. What is there in the former to contend with bunches of *Passiflora alata*, *Allamandas*, *Dipladenias*, *Combretum*, and *Hoya*, &c., brought from the latter? Make two classes, and every one having a flower-garden may exhibit. In the one case, we would reward skill and a generous outlay, in the other, we would reward skill and refined taste.

FLORISTS' FLOWERS.—*Pinks*, and *Carnations*, and *Picotees*, were scarce, principally owing to the lateness of the season. We gardeners should keep in mind that fine, bold, sweet-scented flowers in this family, that would delight ninety-nine out of every hundred of our employers, are of no use for exhibition purposes, if destitute of florist properties.

ROSES, however, made ample amends by their number and magnificence. There was one fine collection from a local nurseryman. With the private growers, it was a thorough neck-and-neck race; not one group was inferior. Though many were gathered in the wet that

morning they bore no marks of injury. Mr. Lane had a splendid collection. He would have had a stiff job if competing with private growers for quality; but for general excellence, numbers, and variety, they would have constituted a grand attraction if the day had been fine. Besides splendid blooms of *Baronne Prevost*, *Chenedolle*, *Duchess of Sutherland*, *Coupe de Hebe*, whole boxes of *Geant des Batailles*, lots of that elegant hybrid Bourbon, *Paul Ricaut*, &c., I noticed the following in splendid condition:—*Crested Moss*, *Dometelle Bicar*, and *Madame Henriette*, PROVENCE. *Didon*, *Latitia*, *Ohl*, *Shakespeare*, and *Triomphe de Janssens*, among the GALlicas. *Comtesse de Sagur*, among the PROVENCE. *Elize Renou*, *General Jacquemiotot*, *Juno*, HYBRID CHINAS. *Amandine*, *Apollon*, *Auguste Mie*, *Caroline de Sansal*, *Chereaux*, *Enfant du Mont Carmel*, *General Castellane*, *General de Brea*, *Inermis*, *Lady Francis Waldegrave*, *Laure Renaud*, *Le Lion de Combats*, *Louis Peromy*, *Madame Framiore*, *Madame Lamoricie*, *Madame Rivers*, *Ncome*, *Pius the Ninth*, and *Standard of Marengo*, among the HYBRID PERPETUALS.

PLANTS.—I shall just do little more than name four things shown in collections as very superior, Balsams, Gloxinias, Fuchsias, and Aehimenes; and these might be described as very good, better, best, and very best, making thus a double superlative for the occasion. The culture of BALSAMS has several times been given to suit different circumstances, but few of our readers have had the pleasure of seeing dense bushes, some three to four feet in height, and almost as much in diameter at the base, and every shoot and twig covered with bloom. Other exhibitors showed denser and dwarfer plants in good condition. GLOXINIAS were shown in excellent condition, large plants, rich green foliage, and abundance of bloom. Some of the most striking kinds were *Grandis*, *Maxima alba*, *Carminata splendens*, *Victoria regina*, *Fifiana*, *Wortley* and *Tencklerii*, *Passinghamii*, and one something in the way of *Handleyana*, but much better, in Mr. Mackie's collection.

FUCHSIAS were splendidly grown; when looking at them, some one was saying behind us, "COTTAGE GARDENER fashion." The two chief lots were very equal in point of culture, but one had better and newer kinds than the other, and, therefore, got the preference. The plants were mostly fully six feet in height, trained to one stick, pyramidal fashion, the base of the pyramid being from two to three feet in diameter, the outline of the sides being just enough broken to give a relief of light and shade, and the whole supplied with bloom, from near the base of the pot to the very summit of the cone. Many would like to know the peculiarity of treatment employed to produce such results, and I do not think I shall offend Messrs. Mackie and Gardiner if I tell.

The most striking plants were potted cuttings last autumn; these were kept slowly growing during winter, shifted in spring as soon as they required it, and training commenced from the first; side-shoots coming strong were stopped, to give two or three shoots instead of one, and thus throw strength into the central leader. If that leader went too far without throwing out side-shoots, that was stopped too, and a fresh leader selected, after the quiet buds had burst into young shoots. This system persevered in, and generous treatment in soil and waterings given, fine results may be obtained. The frequent stoppings thus secures regularity of outline, and great abundance of bloom, though the individual blooms will not be so fine as when there are fewer shoots. Some of the more striking kinds were *Voltigeur*, *Don Giovanni*, *Commodore*, *Rajah*, *One in the Ring*, *Pearl of England*, and *Matilda* (Henderson's), a light sepalled flower, in the way of *Prince Arthur*.

ACHIMENES.—I have already chronicled how fine this tribe of plants were grown at Northampton. The

growers outdid themselves on the present occasion. Such large, compact, densely-bloomed specimens are rarely seen. They were thoroughly and well supported with small sticks, but they were next to invisible, as unless the plant was closely examined near the rim of the pot, not a tie or stick could be easily discernable. The race was a dead heat between Messrs. Gardiner and Mackie. The specimen *Achimenes* were very nearly the same: one a large bush of *Longiflora major*, the other, quite as large, of *Tugwelliana*. A few days more, and there is every chance the second would have been first. Besides these, the most interesting kinds were *Longiflora alba*, *Patens major*, *Venusta*, *Lipmannii*, *Coccinea major*, *Beaumanii hirsuta*; in the way of *Grandiflora*, *Kleii* and *Margueretta*—a beautiful white one, which every grower should get that does not already possess it.

Prompted partly by Mr. Appleby's notice last year of the *Cassia corymbosa*, used as a standard in the flower-garden in summer, I paid a visit to Courteen Hall; but the way in which standards are used in flower-beds there, and the *cheapest*, the *most simple*, and the *most effectual* mode of securing the heads of standard roses, and other things, as invented and practised by Mr. Gardiner, I must defer to "some other day." R. FISH.

CONIFERÆ.

(Concluded from page 243.)

PROPAGATION: BY GRAFTING.—When seeds of any fine Conifer cannot be obtained, and it will not grow by cuttings, recourse must then be had to grafting. In order to succeed in this operation the proper kind of stock must be used. This is sometimes difficult to find out. When the *Cedrus Deodar* was first introduced, it had so much the appearance of a Larch that several eminent nurserymen felt quite sure the Larch would be the very sort of stock to graft it upon: and the grafts did take upon that stock, and grew well for a time, and then began to look sickly, and finally perished. Mr. Baron, the talented gardener at Elvaston Castle, with his usual sagacity, hit upon the right stock, and that was the *Cedrus Lebani*, or Cedar of Lebanon. This species, from its close affinity to the Indian Cedar, he rightly concluded would be the best stock on which to graft it; and he was quite correct in his conclusions. The finest Deodars, perhaps, in Europe, are now growing at Elvaston, grafted upon the Cedar of Lebanon. This is quite certain, for I have seen them, and a portion of the lower parts of trees, the common Cedar, is still growing, or at least was two or three years ago, when I saw them. This incident shows the necessity of using the right kind of stock on which to graft.

All the Pine tribe will grow upon the *Pinus sylvestris*, the common Scotch Fir, or upon the *Pinus Austriaca*, the Austrian Pine. I prefer the latter for very strong growers with long leaves—such, for instance, as *P. Montezuma*, or *P. Gordonii*; whilst the Scotch Fir is a more suitable stock for such species as *P. nobilis*, *P. amabilis*, and all such short-leaved Pines.

For such species as *Abies Douglasii* the common Spruce Fir will be a right stock. These hints will be sufficient to guide the amateur to select proper stocks for the kinds he may yet feel disposed to increase by grafting.

I mentioned last year, in my "Jottings by the Way," that there was, in the gardens at Finedon, near Northampton, the seat of Michael Dolben, Esq., a very remarkable variety of the *Abies Douglasii*, remarkable from the fact that it is a decided weeper. I have been informed that an eminent nurseryman, not a hundred miles from Cheshunt, had fifty scions from this tree

to graft, and that they have all failed; and that failure, I have not the shadow of a doubt, arises from grafting them upon a stock too far removed from the original.

To shew that this novel and rare plant may be propagated by grafting, I need only mention, that the day before I wrote this paper I was in Mr. Jaye's nursery, at Northampton, and saw six established plants of it, and these had been grafted upon the original species, *Abies Douglasii*—another lesson for the grafter of these plants to study.

Preparing the Stocks.—These should be potted very early in the autumn, in as small pots as the roots can be got into without cramping, in a good loamy, rather sandy, soil. Plunge the pots in coal ashes, behind a north wall or dense hedge, where no sun can reach them; here they must remain till the grafting season arrives. The best season for that delicate operation is the latter end of September, though it may be performed all through the winter months, even up to the growing season in spring, but autumn-grafting is the most likely to succeed generally.

The mode of grafting is a rather peculiar one. Having fixed upon a stock and a suitable-sized scion or graft for it, then shorten in the top of the stock, and make a cross section with a very sharp knife. Then cut a longitudinal incision on one side of the stock, corresponding to the corner of the horizontal division; let this upright cut be long enough to receive the graft, and cut a parallel one to the first on the other side. These two cuts will form each side of the graft when it is inserted. Take off the bark between the two cuts; and, if the graft is rather a thick one, take out, also, a portion of wood, enough to allow the scion to be put in exactly level with the bark of the plants grafted: the scion will then stand, as it were, upright, within a niche made for its reception. There are various materials for tying: some use the old material—the garden-mat; others use the new Cuba matting; and others use cotton or worsted-thread of a considerable thickness. I believe the two last are the best, and, perhaps, the cotton better than the worsted; whichever is used, let the scion be tied in immediately after inserting it. That is an important point; the scion then catches, as it were, the rising sap, and immediately receives life from it. I am pretty certain, that if a graft does not take in twenty-four hours it will not take at all.

The Situation in which to place the grafted Plants.—If this work is done in September, they may be placed in a cold frame or pit, and shaded from the sun. In winter-grafting, a warmer place might be desirable; and if delayed till spring, they ought to be placed in a temperature of 55° or 60°. When Messrs. Knight and Perry held the Chelsea Exotic Nursery they had a large collection of Coniferæ, and grafted great numbers of the rare species. They were placed under a span-roofed, glazed, frame, standing upon a platform in a span-roofed propagating house. In this frame I have seen almost every one growing; but such complicated machinery is not necessary; the close pit, or frame, properly shaded, will answer this purpose equally well.

I never tried to bud this tribe of plants, and I fear it would not answer, because of the exudation that always takes place when a bud is broken off accidentally, or cut off purposely. Some of the smaller-growing species would, I have no doubt, grow from buds, because in them the resinous sap is not so abundant, and the bud inserted would, consequently, not be drowned with it.

T. APPLEBY.

JOTTINGS BY THE WAY.

For the last year or two I have had the privilege of visiting various gardens; and, whilst enjoying such a

treat, I took notes of the most remarkable objects. These notes I embodied into short Essays, and sent them to our Editor, to be inserted in THE COTTAGE GARDENER. The effect of their being published I feel now. Whenever and wherever I call, I am welcome, and every improvement in practice, or addition to the stock of plants, pointed out to me. In such Essays I sometimes ventured to suggest improvements, and have the pleasure to find them often carried out and put in practice. Such being the fact, and being now on a short journey, the object of which will again give me an opportunity of seeing gardens, I shall follow the same plan, and send occasional notes, under my old title, "Jottings by the Way."

I am now on a visit to my friend, Mr. Catling, the intelligent Curator of the *Botanic Gardens at Birmingham*, and shall try to give a report on these gardens. They are situated about two miles from Birmingham, on a rather elevated part of the country; the grounds, generally, slope to the south-west, and there are very fine views in that direction from the noble terrace-walk, the country being clothed with wood, and studded with country residences. The soil of the district is a red sandy loam, with a subsoil of clear red sand. This is the soil, also, of the Botanic Gardens, which causes the surface to be always dry, and the turf of the lawn of a fine character. Many trees and shrubs in this soil appear to thrive well, and withstand the frosts better than on a more clayey soil or subsoil. The situation of the gardens, in these respects is favourable. For several years back they seemed to have lost favour in the eyes of the inhabitants of Birmingham. The late Curator, Mr. David Cameron, was a very excellent botanist, and endeavoured to keep the gardens subservient entirely to growing plants of a botanical character. He had, with the exception of Kew, perhaps the finest collection of Ferns in England.

Now, a public garden, conducted on such a method, or principle, is not the establishment to induce the middle classes of a large manufacturing district, like this, to subscribe and support it; and wherever the curators, or committees, of Botanic Gardens confine themselves strictly to keeping them as Botanic Gardens they fail, or, at least, are not well kept, and cannot progress for want of means. Several spirited gentlemen, subscribers to these gardens, having, for some time, observed this to be the case, set themselves to work, obtained the services of the young and talented present Curator, and, acting by his advice, have endeavoured to give the gardens a more popular character; that is, instead of a great number of starved examples of botanical curiosities, handsome, free-flowering shrubs and plants are cultivated throughout every department, preserving, of course, all that were sufficiently interesting in character to attract the mere lover of beautiful objects in a garden.

This system has been acted upon for the last six years, and the consequence is, the funds have at least trebled in amount; and the committee, with a liberality very commendable, have opened the gardens to the public every Monday, during the summer season, at the small charge of one penny each person, for the working classes only—thus giving them the opportunity of seeing the beautiful gardens, enjoying the refreshing and invigorating breezes, and, no doubt, improving their taste; and—for the time, at least—drawing them away from the stifling workshop, and the more demoralising beer-house. Such has been the attraction of the gardens to the inhabitants of this large town, that on Monday last there was, as the Curator informs me, no less than 4,911 visitors. This looks well; and the liberality exercised in opening the gardens to this class of visitors has been rewarded, by adding considerably to the funds, even at that very low charge of admission. Such a practice is worthy of imitation; and the Botanic

Gardens of Manchester, Liverpool, Sheffield, Dublin, Edinburgh, and, I venture to say, London, would act wisely, and, I think, beneficially, to follow their example.

Mr. Catling says, that the gardens are not injured in the least by admitting such a large number of the lower classes, excepting a little trampling among the shrubs, which a few hours labour with the rake sets to right the morning following.

I find my space is becoming very small, and therefore I must bring these observations to an end. To give such of our readers as have not seen them an idea of these gardens, I may state, that the extent is twelve acres, laid out in winding, broad walks. There is a range of glass, consisting of a lofty greenhouse, conservatory in the centre, a house for stove plants on the east end, and one for greenhouse plants on the west.

There has been lately erected a house, 60 feet by 40 feet, for an aquarium, the grand object in it being to cultivate the far-famed *Victoria regia*. The plant in it is making great progress, and will shortly flower. To encourage its growth, Mr. Catling adds now and then a covering of rich soil to the hillock under the water in which it is planted. He finds these additions beneficial, and more serviceable than placing the whole of the soil in at once. I saw, through the clear water, young, strong roots protruding through the last additional layer, thus proving the beneficial effects of the application. Behind these houses, there is a large house devoted to orchidaceous plants, and an arrangement of pits for the protection of half-hardy plants through the winter. There is also a Rosary, an American garden, and a large space of ground for the culture of herbaceous plants.

T. APPLEBY.

(To be continued.)

ALLOTMENT FARMING.—AUGUST.

VERILY, if ever there was one season more calculated than others to damp the ardour of allotment-men, it is that we have just passed, at least in this part of the country. The weather broke about the middle of June, up to which period there had been a very considerable drought; and the advent of rain was hailed, on all sides, as an unusual boon. From that period, until the time I am recording the matter, we have had almost continual rains; and, latterly, a whole fortnight of the most deluging character, the consequences of which are disastrous indeed. Most of the low districts in Lancashire and Cheshire, to say nothing of contiguous counties, have become a complete ocean—some portions, were it not for hedges and trees, more resembling such muddy shoals as Morecombe Bay, than high farming districts. Hay crops if early cut, and the Clovers, are nearly all lost, or rendered valueless; and, in many cases, floated away for miles, the rivers, in parts, almost choked with this ill-spared and valuable material. In all directions, too, the hay might be seen driven into the hedges as though placed there. Some farmers hereabouts, to my knowledge, have had their Clovers down a month or so, and our readers may guess the loss and disappointment consequent on having them all but ready half a score of times, again to be doomed to disappointment.

As for the *root-crops*, I never saw them so weedy in my days, for although most farmers had surplus labour waiting the hay, they could not be efficiently employed three hours in the day, on an average. So our allotment friends who have suffered must take heart, by remembering that it is the common lot. "Never despair," must be an Englishman's motto.

Our first enquiries now must be, what policy to adopt, where crops have been thus injured, or arrested in their progress, and choked with weeds. I must here point to one great fact bearing on the future—a fact I have often adverted to—and that is, how important it is, with root or green crops, to gain a good start in the spring. Let our

readers never forget this: there is enough before their eyes to convince them; and the allotment-holder, or cottager, who was thus diligent in the spring, and whose plot adjoins a put-off or a stand-still, will enjoy a secret satisfaction, whilst it may be feared the other burns with secret envy and chagrin. Plots which had been early attended to may be weedy, but the weeds will be mostly small, and scarcely arrived at seeding point; whilst the neglected crops will appear irremediable; and when a man, in any of the walks of life, is thus overfaced, he but too often gives way to despair.

If such crops as *Sweedes*, *Turnips*, *Mangold*, *Parsnips*, &c., are foul with small weeds, and the period is still showery, it is the best plan to dig them in; but at this advanced period this requires some care. The weeds should be weeded by hand first *amongst the plants*, then the broad hoe should draw the weeds from the sides towards the centre, and, finally, one to two spits in width may be dug down each centre, burying all the weeds. If they are foul with gross seed-weeds, through neglect in spring, nearly all the process must be hand-weeding, and the owner must at once count on double or treble labours for three succeeding years. According to the old saying, "one year's seeds, seven years' weeds;" and this is, indeed, near the truth. But, in all these protracted operations, even when conducted with much care, the mischief to the haulm or foliage of the plant is considerable. Every leaf or stem that is damaged at this period is a certain loss to the plant it belongs to, although that plant be but a Potato or a Carrot; and such, multiplied through a whole crop in a perilous position, will be found to produce results which are sufficiently alarming to caution sensible cultivators from tampering with, or neglecting, their crops in a succeeding spring.

POTATOES.—Up to this period, July 16th, there is little, if any appearance of the dreaded Potato disease, and it is much to be hoped that it is wearing away, for assuredly the weather has afforded every tendency to its ravages. Extra care of the seed, a point so much urged by sound, practical writers for years, has at last prevailed, and to this may be ascribed, in a high degree, the partial arrest of this dread malady. Let me repeat the advice previously given in these papers, to secure good seed, and to give it separate treatment from the very first. There is, as our readers are aware, a new project started as a cure, by a Mr. Bollman, and which consists in subjecting the seed to a heat of from 133° to 144° for four days. We shall watch the results, and try the plan also, and advise many of our readers to do likewise, and communicate *genuine facts* to our Editor at the close of another year. In the mean time, I advise that the seed be kept constantly as dry as possible, henceforward, until the next February. Potato crops will now require little assistance; where the foot can be placed without damaging the haulm let every weed be pulled.

WINTER GREENS.—Let every decaying and decayed summer crop be immediately cleared from the garden, every weed rooted out, and all such places be filled immediately with such of this family called Cabbageworts, as may be most useful or profitable to the cultivator. Of course it is getting rather late, and the produce will not be full-sized; but never mind that; try to make every blank assist in paying the rental.

I have, in former papers, adverted to the profit which might be derived from the crop called by our London market-gardeners, *Coleworts*, which simply means, peculiar kinds of Cabbages, sown at peculiar seasons. Coleworts, as supplied to the London markets, are generally tied in bunches by the roots, about six or eight in a bunch, I believe, or it may be a dozen, and they are in that state which practicals term—"just forming heart." These, as before stated, should be sown from the middle of June to the second week in July; any early-hearting dwarf and compact-growing Cabbage will do. The London market-men are so particular, that they secure their own kind, on which they much pride themselves, and they are always of kinds possessing thick and succulent veins or ribs in the leaves, as such burst better, and are altogether more profitable. Those who took my earlier advice about these things will do well, especially if near a thriving town, to fill every waste plot with their June sowings, and throw them into market about Christmas.

ONIONS.—These must be looked to at the end, and all those which have completed their growth at once bent down, and every endeavour made to secure an early harvest. We always, although so far north, plant a crop of spring Coleworts in the Onion ground after they are removed. These Coleworts we use in February and March, and they form the connecting link between the autumn Coleworts and the spring Cabbage, as far as Cabbages are concerned.

CABBAGES, for the next summer, may be sown from the first week in August until the third; *Cauliflowers*, to go through the winter, in the last week; *Onions*, to endure the winter, about the middle; *Spinach*, for a full winter's crop, in the first week. I have little more to add at present—other ordinary matters will point to their own needs. Let me direct attention to the muck heap; I wish I could persuade my friends of the small garden the great importance of increasing their attention in this important affair.

R. ERRINGTON.

APIARIAN'S CALENDAR—AUGUST.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

JOINING SWARMS TO OLD STOCKS.—A short time before reading Mr. Desborough's prize Essay on the longevity of the honey-bee, I had seen a stock of two or three years standing, to which a swarm from another stock had just been joined, and I was astonished at the quantity of honey it had collected only in a few days. This is one of the things recommended in the prize Essay, and, perhaps, with the advice of retaining stocks of one year old or upwards, instead of swarms, when it is *absolutely necessary* to reduce the number of hives in an apiary, may be considered the most valuable part of it; for, instead of waiting to unite in the autumn, how much better it appears to be able to unite and strengthen stocks at swarming time. No feeding is needed, for the bees will work with double energy, apparently, when thus united; indeed, the stock above alluded to has done so, for I have very lately had another opportunity of examining it. The hive itself is full, and a box on the top filling very fast. Altogether it weighs as nearly as possible *forty pounds*.

DURATION OF LIFE IN THE HONEY-BEE.—It is pleasing to find that Mr. Desborough has confirmed everything that Dr. Bevan and others had already told us; it would be unreasonable to expect more than an approximation, for duration of life is clearly not even always the same, for the seasons and weather influence it.

MARKING A QUEEN.—There is no other way of marking a queen, that I am aware of, than either by cutting off one of the antennæ, or a small portion of the tip of one wing, which has been done by Mr. Golding and others. The hint given by the Editor of THE COTTAGE GARDENER of the 30th ulto., of marking the queen with a streak of white paint across her wings, however ingenious, would, I fear, be found not to answer the end intended, for any one who has witnessed the devotion of her subjects to her, knows they are perpetually licking her, and any colouring matter would not, I expect, be tolerated for an instant.*

TAYLOR'S DIVIDING HIVE.—In my last calendar I gave a description of this hive, and at the same time expressed a hope, that in my next I should be able to give a favourable account of the operation of dividing, which I am now fully enabled to do, for it is, indeed, *most* simple. When all things were prepared, it did not occupy two minutes; and so little were the bees annoyed by it, that I used no protection whatever, either for my face or hands, only taking the precaution to take off my coat, and bare my arms to my elbows, but even this was unnecessary, and so far from having a sting, I did not even hear an angry note. The zinc dividers I did not use, neither did I drum upon the boxes, both which might tend to irritate the bees. The queenless part very soon discovered itself by the greatest bustle and confusion possible, which lasted till midnight, but the next morning all was quiet, and they set to work in

* Would licking remove a streak of oil paint? However, cutting off one antenna, if done in several hives, would be good evidence.—ED. C. G.

right good earnest, carrying in pollen most abundantly, which they have continued to do every favourable day since; but not so the half which has the queen, for they have shown a degree of sluggishness ever since the operation; but as they are rich in honey, as well as pretty numerous, it may not be of much consequence.

THE SEASON.—In some districts the honey harvest has been very abundant, in others the reverse, but upon the whole I think it may be considered a tolerably good season.

DOING EVIL THAT GOOD MAY COME.

By the Authoress of "My Flowers."

Do any of my readers remember the sketch of the bachelor, John M——, his pretty cottage, and old-maidish ways? Well, I am now going to give them the reverse of that pretty picture; I am going to disenchant them as to old bachelorism; and, above all, to point out the sure and certain consequences of sin. This is a subject that cannot be too often, or too severely, handled. We may be kind to our neighbour's little faults and follies; but we must not be kind to their, or our own, *sins*; and it is most striking to observe, how invariably the absence of godliness prepares the way for the entrance of unhappiness, though it may be "after many days."

For years, John M—— had gone quietly and happily on, in his comfortable cottage, with nothing, as it seemed, to interfere with him; and, for some time after I sketched his portrait, he went on in the same way. He was a *quiet* man; his voice, though a very loud and "*craky*" one, was never heard, and he was so embowered in trees, and out of everybody's sight, that except one went down to his little cottage, and hunted him out, he was rarely to be met with.

There is, unhappily, upon the Common, near which M——'s little cottage is situated, a certain beer-house, which has been a pitfall for many a poor, thoughtless soul. It was a place, indeed, that never prospered; first one man, and then another took it, and went away ruined, or injured, not because people did not drink, but because there was another pitfall of grander pretensions very near it, which drew off the bulk of the population. This beer-house was again untenanted during the past year; and one day, to our surprise, a rumour reached us, that John M—— had taken it. We were, for some time quite sure that this was not true; but at last we were obliged to believe it. The fact was known, and preparations were making for the event. M—— was spoken to very strongly on the subject, but he was resolute. "Times," he said, "were hard, and people must do what they could to get a bit of bread." His little freehold was mortgaged, and he had to pay a heavy sum every year. So he was tempted to "do evil that good might come;" to give up his quiet home, and worldly respectability, to undertake the shocking traffic of a beer-house; draw men on to ruin; become vile in the eyes of right-thinkers, and defy every law of a pure and holy God! This, readers, is the fruit of unbelief; the consequences of living very decently, but "without God, in the world."

It made us quite sad to see the poor bees placed in their new home. They were brought away from the shades, and shelter, and flowers, and peace, of their former residence, and stuck up in the middle of an untidy, unsheltered, beer-house garden, with only an old straggling plum-tree or two to swarm upon, and no screen, except a straw back, which was placed to protect them from the cutting north-east wind. Every one foretold the end of M——, and his bees, and he was already ashamed of himself, for he got out of every one's way who was likely to speak out, and pretended not to see, when he was *obliged* to meet them. I believe, indeed, that no conscience ever needs an accuser; it speaks plainly enough its own self; and if we would only do its bidding, we should seldom have to sigh and cry for the evils we now too often have to deplore.

M—— professed to enter upon his new career with some spirit. He went about very cheerily at first, carried things with rather a high hand, and established penny peep-shows, in holiday time, which it was thought might overpower the less enterprising beer-house in his vicinity. But very soon,

very, very soon, M—— began to look dirty, and white in the face. He seldom entered his garden, but his "craky" voice was heard within, and a great deal of dirt and disorder appeared without. It was plain to be seen that all was not gold that glittered; and it was thought that things could not go on long in this way.

In less than a twelvemonth from his first outset at the beer-house, M——, his bees, and his household goods disappeared; the place was shut up, as if by magic, and dead silence settled upon the scene. No one knew where, or how he decamped; but one morning he *was not*; and there was nothing for his landlord to do but to look out for a new tenant without loss of time.

The little freehold cottage was in the possession of some one else; M—— had no home to return to; and he took refuge, no one knew where, until the storm had blown over.

Within the last few months M—— has appeared again in the neighbourhood, with a yellow face, a dejected air, and no smile on his countenance; never was there a more altered person. He flits about the scene of his former home like a restless ghost. He has neither wife, nor child, nor hearth, to make him comfortable; and repentance is but a melancholy companion to a disappointed worldly man. Godly repentance has healing in its wings, but worldly repentance is bitter and unbearable; it has no one to bear its burden, or take it away, and every day increases its bitterness.

M—— can see the trees waving over the snug cottage which is no longer his; he can see its chimney peeping through them; and the smoke of what was once his own hearth curling up towards the blue sky. Had his thoughts curled upwards too, in the days of prosperity, sorrow might never have fallen upon him, or, at least, it would have visited him in mercy, and not in judgment. But as it is, there is nothing to make it sweet. He sees and remembers former days, only to grieve over his own folly. His honey-pots—his jars of plums—his rack full of bacon—and his shed full of potatoes—are all a melancholy dream. Without God, memory has no pleasures; without God, possession has no security; without God, the future has no promise.

From M——'s example, we may see what it is to "do evil that good may come." He that tries to "build his house by unrighteousness, and his chambers by wrong," will inherit the "woe," that has been spoken against him. If we cannot live by honest labour, it is far better to go quietly and honourably into the Union, than strive, like a potsherd, against our Maker, doing evil, in the vain and wicked hope, that good may come. The Union may come to be the end of John M—— after all, and then he will find it doubly cutting, and painful, and distasteful, because he will feel that his own fault, his own sin, hath found him out, and brought him to ruin. There is nothing so hard, so terrible to bear, as self-condemnation. John M—— has no one to blame but himself, and the master he worked for. Had he laboured in the service of the Lord, he would not have been forsaken in time of need; "bread should be given him, his water should be sure." But we cannot work for a master we do not know; we cannot trust a master we do not know; and this is the reason why we do evil that good may come. Satan makes us large promises, at such a cheap and easy rate, that we love to go after him. We need not break off our sins, but continue in them, to please and serve him. He takes possession of us from our cradle, and his service is so pleasant to us, that we refuse the calls of Him, who "stretcheth out His hands all the day long" to us; we are "a rebellious and gainsaying people."

John M—— took not God for his master; and behold the end! My dear readers, learn a lesson. Whoever you are, and whatever is your path in life, serve and worship God; take Him for your master, and all will be well. Our duty is our happiness, our safety, and our prosperity. The wages of Satan are misery here and death hereafter; worse than death—everlasting destruction! Go to the Union with a peaceful conscience, and your sleep shall be sweet; but go to evil ways to get bread, and you shall "lie down in sorrow."

Remember the history of John M——, and never be tempted to do evil that good may come.

MEETING OF THE ROYAL AGRICULTURAL SOCIETY AT GLOUCESTER.

THE Meeting of the Royal Agricultural Society, recently held at Gloucester, has proved one of the most important and valuable exhibitions, both of cattle and agricultural implements, ever held by the Society. The city of Gloucester is well situated for an exhibition of the kind, being contiguous to the fine grazing districts of the counties of Hereford, Oxford, Berks, Wilts, Somerset, and Worcester. The railway, which connects the city of Gloucester with the Great Western main line, runs through a remarkably picturesque part of the county. The valley below the town of Stroud, down to Brimscombe, although very narrow, exhibits some fine scenery, and is intersected by a river of excellent water, upon the banks of which are erected numerous mills and factories for the making of cloth, for which the county is celebrated. The hill-sides of this valley, are, in many parts, thickly studded with cottages, built of stone, for the accommodation of the numerous people engaged in the cloth factories, and these, in contrast with the hill-tops covered with thriving woods, render the prospect particularly attractive. The numerous fine gorges, and wooded ravines, branching out on either side of the valley, give this part of the county a delightful and beautiful aspect, which can scarcely be surpassed by the scenery of any district in England. As you approach nearer to Gloucester, the country is more open, but, for the most part, consisting of grazing land, even to the sides of the hills, which are exceedingly picturesque, and bear evidence of having been, at a remote period, the site of Roman encampments. To return, however, to our subject; the exhibition of cattle might have been expected to be first-rate, and the *Hereford* breed being, as it were, at home, were decidedly in the ascendency; the immense size, beautiful symmetry, and excellent quality, of all ages, of the prize animals of this breed, has, in my opinion, never been surpassed at any previous exhibition of this Society. The show of *Devon* cattle was also a good one, and I think many of the animals were somewhat larger than on former occasions, which is very desirable; the *Devon* being rather a small beast, although very compact, and possessing a good constitution. The *Short-horn* class did not exhibit many animals; but, though the numbers were limited, their quality and size was unexceptionable; and I consider the completest animal in the yard was shown in this class, viz., a two-years and five-months-old heifer, No. 54, exhibited by Mr. Richard Booth, of Warlaby, Yorkshire. It was easily to be discerned that the cattle were not so fat as upon some former occasions, and, no doubt, this arose from the fear of being disqualified; and public opinion is decidedly in favour of the new rule of the Society, by which, animals in a state too fat and helpless for breeding purposes may be disqualified by a jury of inspection, previous to the examination and award of the judges. A few of the *Welsh* breed of cattle were shown, and appeared to be useful animals, and no doubt very hardy, and may answer very well for a bleak, mountainous district. Several animals of the old *Long-horn* breed of cattle were present, and were very good specimens of their race; but this breed will, in all probability, very soon give place to one or other of the improved breeds.

The show of *Horses*, upon the whole, was fair; the two-year-old animals were certainly very good. I was, however, somewhat disappointed by the exhibition of nag horses, they being, for the most part, inferior. The Ponies, from Wales, were very limited in number, and not calculated to produce an impression in favour of the breed.

A very important and interesting exhibition of *Sheep* stock took place. The Long Wools and Leicesters mustered in large numbers; and, although there were instances of disqualification, yet, altogether, the animals showed improvement in flesh and quality upon some past exhibitions; and I must not pass, unnoticed, one animal in particular—a twenty-eight-months-old Cotswold ram, bred by Mr. William Slatter, of Stratton, near Cirencester. It was a sheep of rare merit, being of an immense size, beautiful symmetry, and full of flesh, without fat. The Short Wools were also a good show, but I do not consider the South Downs exhibited any improvement upon former shows. The variety of Short-woolled sheep, called Shropshire Downs, were an

interesting feature of the exhibition, and attracted the attention of practical farmers (who keep sheep for profit), more than any Short-woolled sheep in the yard. The pen of five sixteen-months-old Shropshire Down Ewes, bred by Mr. Wm. Foster, of Stourbridge, Worcester, were decidedly the most useful Short-woolled sheep, for general purposes, exhibited in the show.

In the class of *Pigs*, some animals were disqualified, and were quite useless as breeding animals, showing that the aptitude to fatten in an animal may be a positive evil, for all useful purposes, unless at the same time due regard be paid to the maintaining a sufficiency of flesh of good quality. The show of Pigs was an improvement upon some previous displays, being calculated (with some few exceptions) to produce animals of immense size, and excellent quality, at an early age; a particular instance of this, was a large Sow, shown by Mr. Thomas Craven, of Manningham, near Bradford, York, to which was awarded a prize of £10.

There was also an important display of *Poultry*, there being some remarkable good specimens in nearly every class. In fact, the breeding of poultry seems to be attracting attention sufficient to raise it into an important branch of farming economy. The show of Dorkings was certainly unequalled.

In the *Implement department* of the Exhibition it may be affirmed that great improvement was to be observed; indeed, so great is the ingenuity of our implement-makers, and so keen is the competition between them, that there does not appear to be any limit to invention; and, therefore, we may still, with confidence, look forward for great and extensive improvement in machinery and implements. The large Turnip, Corn, and Manure Drills, manufactured by Messrs. Garrett and Son, and by Messrs. Hornsby and Son, which received prizes, all exhibited, more or less, improvement in the practical detail of their construction. A new Drill for small occupations, for which Messrs. Smith and Son received a prize of £5, must be noted as a valuable addition to our farming implements.

The Reaping Machines were an interesting and important part of the show. Six of them were selected for further trial, and, no doubt, all are capable of further improvement, for all seem to differ in some detail of their construction. The new Steel Tools exhibited by Winton and Sons, are well worth more attention. The Plough for general purposes, to which the prize was awarded, although it may be lightest in draft when tested by the dynamometer, is much too heavy. The principal of its construction is certainly good, and it is strong enough in its make to plough the heaviest land, and, therefore, over heavy and inconvenient for general purposes. A new Water-drill, invented by Mr. W. C. Spooner, of Eling, near Southampton, and manufactured by Messrs. Tasker and Fowle, attracted a great deal of attention, and considerable surprise was evinced by many parties, who enquired into its merits, that it did not receive the prize offered by Philip Pusey, Esq., for the best Water-drill, instead of a commendation. This drill may be used either as a dust or water-drill, is capable of applying either a large or small quantity of bones, or any concentrated manure, as also of water, either separate or mixed. The water and manure apparatus being distinct, admits of the application of almost any amount of water per acre (from one to fifteen hogsheads), which can be varied to any extent, whilst the distribution of the manure may remain the same. As the water is discharged upon the principle of gravitation, no power is employed in raising it, whilst the simplicity of its construction secures it from getting quickly out of repair. It is altogether a novelty, and we fear this fact has operated unfavourably on the minds of the judges. Although this drill had not been previously tried in public, its merits are, notwithstanding, observed at first sight; its advantages are so self-evident, and so superior to that of the drill which received the prize, exhibited by Messrs R. and J. Reeves, that I cannot but remain impressed with its superiority until further trial shall prove the contrary.

JOSEPH BLUNDELL.

SHORT HORNS.

JUDGES.—MESSRS. JOHN GREY, CHARLES STOKES, and JOHN WRIGHT.

Class 1.—Bulls, calved previously to the 1st of July, 1851, and not exceeding four years old.

First prize of 40*l.* to No. 11, viz., to Right Hon. Lord Berners, of

Keythorpe Hall, Tugby, Leicester. Second prize of 20*l.* to No. 6, viz., to Richard Stratton, of Broad Hinton, Swindon, Wilts.

Class 2.—Bulls, calved since the 1st of July, 1851, and more than one year old.

First prize of 25*l.* to No. 21, viz., to Richard Booth, of Warlaby, Northallerton, York. Second prize of 15*l.* to No. 25, viz., to William Fletcher, of Radmanthwaite, Mansfield, Notts.

Class 3.—Cows in-milk or in-calf.

First prize of 20*l.* to No. 33, viz., to Henry Smith, of the Grove, Cropwell Butler, Bingham, Notts. Second prize of 10*l.* to No. 35, viz., to Richard Booth, of Warlaby, Northallerton.

Class 4.—Heifers in-milk or in-calf, not exceeding three years old.

First prize of 15*l.* to No. 54, viz., to Richard Booth, of Warlaby, Northallerton. Second prize of 10*l.* to No. 55, viz., to Richard Booth, of Warlaby, Northallerton.

Class 5.—Yearling Heifers.

First prize of 10*l.* to No. 74, viz., to B. H. Allen, of Longcroft Hall, Lichfield. Second prize of 5*l.* to No. 71, viz., to Richard Stratton, of Broad Hinton, Swindon.

HEREFORDS.

JUDGES.—MESSRS. WILLIAM COX, THOMAS HARTSHORNE, and JOHN WILLIAMS.

Class 1.—Bulls, calved previously to the 1st of July, 1851, and not exceeding four years old.

First prize of 40*l.* to No. 77, viz., to Right Hon. Lord Berwick, of Cronkhill, Shrewsbury. Second prize of 20*l.* to No. 82, viz., to John Carwardine, of Stockton Bury, Leominster.

Class 2.—Bulls, calved since the 1st of July, 1851, and more than one year old.

First prize of 25*l.* to No. 86, viz., to Edward Price, of Courthouse, Leominster. Second prize of 15*l.* to No. 88, viz., to Right Hon. Lord Berwick, of Cronkhill, Shrewsbury.

Class 3.—Cows in-milk or in-calf.

First prize of 20*l.* to No. 99, viz., to John Monkhouse, of the Stow, Hereford. Second prize of 10*l.* to No. 94, viz., to James Ackers, of Prinknash Park, Painswick, Gloucester.

Class 4.—Heifers in-milk or in-calf, not exceeding three years old.

First prize of 15*l.* to No. 106, viz., to Right Hon. Lord Berwick, of Cronkhill, Shrewsbury. Second prize of 10*l.* to No. 103, viz., to Philip Turner, of the Leen, Pembridge, Leominster.

Class 5.—Yearling Heifers.

First prize of 10*l.* to No. 114, viz., to Edward Price, of Courthouse, Pembridge.

DEVONS.

JUDGES.—MESSRS. PHILIP HALSE, E. L. FRANKLIN, and HENRY TRETHERY.

Class 1.—Bulls, calved previously to the 1st of July, 1851, and not exceeding four years old.

First prize of 40*l.* to No. 121, viz., to George Turner, of Barton, near Exeter. Second prize of 20*l.* to No. 120, viz., to Robert Wright, of Moor Farm, Taunton.

Class 2.—Bulls, calved since the 1st of July, 1851, and more than one year old.

First prize of 25*l.* to No. 128, viz., to George Turner, of Barton, near Exeter. Second prize of 15*l.* to 132, viz., to Samuel Farthing, of Stowey Court, Bridgwater.

Class 3.—Cows in-milk or in-calf.

First prize of 20*l.* to No. 142, viz., to George Turner, of Barton, near Exeter. Second prize of 10*l.* to No. 143, viz., to George Turner, of Barton, near Exeter.

Class 4.—Heifers in-milk or in-calf, not exceeding three years old.

First prize of 15*l.* to No. 152, viz., to George Turner, of Barton, near Exeter. Second prize of 10*l.* to No. 153, viz., to James Hole, of Knowle House, Dunster, Somerset.

Class 5.—Yearling Heifers.

First prize of 10*l.* to No. 163, viz., to James Quartley, of Molland House, South Molton. Second prize of 5*l.* to No. 169, viz., to James Quartley, of Molland House, South Molton.

WELSH BREEDS.

JUDGES.—MESSRS. J. E. JONES and THOMAS HUNT.

Class 1.—Bulls, calved previously to the 1st of July, 1851, and not exceeding four years old.

No entry.

Class 2.—Bulls, calved since the 1st of July, 1851, and more than one year old.

The prize of 10*l.* to No. 175, viz., to William Powell, of Eglwysnewydd Margam, Taibach, Glamorgan.

Class 3.—Cows in-milk or in-calf.

First prize of 10*l.* to No. 177, viz., to William Powell, of Eglwysnewydd Margam, Taibach, Glamorgan. Second prize of 5*l.* to No. 176, viz., to George Goode, of Croft Cottage, Carmarthen.

Class 4.—Heifers in-milk or in-calf, not exceeding three years old.

The prize of 10*l.* to No. 178, viz., to William Powell, of Eglwysnewydd, Glamorgan.

Class 5.—Yearling Heifers.

The prize of 5*l.* to No. 179, viz., to George Goode, of Croft Cottage, Carmarthen.

OTHER BREEDS—NOT INCLUDING THE SHORT-HORN, HEREFORD, DEVON, OR WELSH BREED.

JUNGES.—MESSRS. THOMAS HUNT, JOHN EDWARD JONES, and E. L. FRANKLIN.

Class 1.—Bulls, calved previously to the 1st of July, 1851, and not exceeding four years old.

The prize of 10*l.* to No. 181, viz., to Nathaniel G. Barthropp, of Creetingham Rookery, Woodbridge, Suffolk.

Class 2.—Bulls, calved since the 1st of July, 1851, and more than one year old.

The prize of 10*l.* to No. 183, viz., to Samuel Burberry, of Wroxhall, Warwick.

Class 3.—Cows in-milk or in-calf.

The prize of 10*l.* to No. 190, viz., to Captain Inge, of Thorpe, Tamworth, Staffordshire.

Class 4.—Heifers, in-milk or in-calf, not exceeding three years old.

The prize of 5*l.* to No. 194, viz., to Edward Cane, of Berwick Court, Alfriston, Lewes, Sussex.

Class 5.—Yearling Heifers.

The prize of 5*l.* to No. 197, viz., to W. C. Cartwright, of Aynhoe Park, Brackley, Northampton.

HORSES.

JUNGES.—MESSRS. T. R. COLTON, W. C. SPOONER, and WILLIAM LINTON.

Class 1.—Stallions for agricultural purposes, foaled previously to the 1st of January, 1851.

First prize of 30*l.* to No. 219, viz., to Samuel Clayden, of Little Linton, Cambridge. Second prize of 15*l.* to No. 227, viz., to William Wilson, of Ashbocking, Ipswich.

Class 2.—Stallions for agricultural purposes, foaled since the 1st of January, 1851.

First prize of 20*l.* to No. 246, to John Ward, of East Mersea, near Colchester. Second prize, of 10*l.* to No. 238, viz., to George Sexton, of Thorington Hall, Wherstead, Ipswich.

Class 3.—Roadster Stallions.

The prize of 15*l.* to No. 260, viz., to John Lister, of Addingham, near Otley, Yorkshire.

Class 4.—Stallion Ponies.

The prize of 10*l.* to No. 1103, viz., to W. B. Reed, of Victoria Square, Clifton, near Bristol.

Class 5.—Mares and Foals for agricultural purposes.

First prize of 20*l.* to No. 276, viz., to Henry Bailey, of Walgaston Farm, near Berkeley, Gloucester. Second prize of 10*l.* to No. 277, viz., to T. B. Brown, of Hampen, Andoversford.

Class 6.—Mare Ponies.

The prize of 5*l.* to No. 1105, viz., to W. B. Reed, of Clifton, near Bristol.

Class 7.—Two years old Fillies for agricultural purposes.

First prize of 15*l.* to No. 293, viz., to T. B. Brown, of Hampen, Andoversford. Second prize of 5*l.* to No. 294, viz., to James E. Owen, of Hodcott, West Ilsley, Newbury.

SHEEP.—LEICESTERS.

JUNGES.—MESSRS. HUGH AYLMEY, SAMUEL BENNETT, and HENRY CHAMBERLAIN.

Class 1.—Shearling Rams.

First prize of 30*l.* to No. 308, viz., to William Sanday, of Holme Pierpoint, Nottinghamshire. Second prize of 15*l.* to No. 302, viz., to T. E. Pawlett, of Beeston, Sandy, Bedfordshire.

Class 2.—Rams of any other age.

First prize of 30*l.* to No. 331, viz., to T. E. Pawlett, of Beeston, Sandy, Bedfordshire. Second prize of 15*l.* to No. 340, viz., to William Sanday, of Holme Pierpoint, Nottinghamshire.

Class 3.—Pens of Five Shearling Ewes of the same flock.

First prize of 20*l.* to No. 358, viz., to William Sanday, of Holme Pierpoint, Nottinghamshire. Second prize of 10*l.* to No. 359, viz., to William Sanday, of Holme Pierpoint, Nottinghamshire.

SOUTH-DOWN, OR OTHER SHORT-WOOLLED SHEEP.

JUNGES.—MESSRS. EDWARD TRUMPER, JOHN WATERS, and EDWARD POPE.

Class 1.—Shearling Rams.

First prize of 30*l.* to No. 404, viz., to Jonas Webb, of Babraham, Cambridge. Second prize of 15*l.* to No. 408, viz., to Jonas Webb, of Babraham, Cambridge.

Class 2.—Rams of any other age.

First prize of 30*l.* to No. 439, viz., to Henry Lugar, of Hengrave, Bury St. Edmunds. Second prize of 15*l.* to No. 427, viz., to William Rigden, of Hove, near Brighton.

Class 3.—Pens of Five Shearling Ewes, of the same flock.

First prize of 20*l.* to No. 453, viz., to Henry Lugar, of Hengrave, Bury St. Edmunds. Second prize of 10*l.* to No. 455, viz., to Henry Lugar, of Hengrave, Bury St. Edmunds.

LONG-WOOLLED SHEEP.

Not qualified to compete as Leicesters.

JUDGES.—MESSRS. JOHN ABBOTT, CHARLES CLARKE, and N. C. STONE.

Class 1.—Shearling Rams.

First prize of 30*l.* to No. 495, viz., to William Lane, of Broadfield Farm, Northleach. Second prize of 15*l.* to No. 468, viz., to William Garne, of Aldsworth, Northleach.

Class 2.—Rams of any other age.

First prize of 30*l.* to No. 514, viz., to William Slatter, of Stratton, Cirencester. Second prize of 15*l.* to No. 512, viz., Edward Handy, of Sevenbampton, Andoversford.

Class 3.—Pens of Five Shearling Ewes of the same flock.

First prize of 20*l.* to No. 535, viz., to William Lane, of Broadfield Farm, Northleach. Second prize of 10*l.* to No. 534, viz., to William Lane, of Broadfield Farm, Northleach.

PIGS.

JUNGES.—MESSRS. JOHN CLAYDEN, WILLIAM HESSELTINE, and HENRY ENDISON.

Class 1.—Boars of a large breed.

First prize of 15*l.* to No. 595, viz., to Robert Crossley, of Holland St. Milcs, Platting Newton, Manchester. Second prize of 5*l.* to No. 602, viz., to Thomas Horsfall, of Burley Hill, Otley, Yorkshire.

Class 2.—Boars of a small breed.

First prize of 15*l.* to No. 626, viz., to William Northey, of Lake Lifton, Devon. Second prize of 5*l.* to No. 638, viz., to John Moon, of Lapford, Crediton.

Class 3.—Breeding Sows of a large breed.

The prize of 10*l.* to No. 656, viz., to Thomas Craven, of Whetley St. Manningham, Bradford.

Class 4.—Breeding Sows of a small breed.

The prize of 10*l.* to No. 705, viz., to John Moon, of Lapford, Crediton, Devon.

Class 5.—Pens of Three Breeding Sow-Pigs of a large breed, of the same litter above four, and under eight months old.

The prize of 10*l.* to No. 724, viz., to William James Sadler, of Benham Purton, Swindon.

Class 6.—Pens of Three Breeding Sow-Pigs of a small breed, of the same litter, above four, and under eight months old.

The prize of 10*l.* to No. 737, viz., to the Right Hon. Lord Wenlock, of Eserick Park, Yorkshire.

SPECIAL PRIZES.

SHROPSHIRE, OR OTHER GREY AND BLACK-FACED SHORT-WOOLLED SHEEP.

JUNGES.—MESSRS. W. T. HARTSHORNE, W. COX, and JOHN WILLIAMS.

Class 1.—Rams of any age.

First prize of 20*l.* to No. 537, viz., to John Gillett, of Brize Norton, Witney, Oxon. Second prize of 10*l.* to No. 546, viz., to Thomas Horton, of Hamage Grange, Cressage, near Shrewsbury.

Class 2.—Pen of Five Ewes of any age, with their Lambs.

The prize of 10*l.* to No. 575, viz., to William Foster, of Kinver Hill Farm, Stourbridge.

Class 3.—Pen of Five Shearling Ewes.

The prize of 10*l.* to No. 584, viz., to William Foster, of Kinver Hill Farm, Stourbridge.

POULTRY AT THE ROYAL AGRICULTURAL SOCIETY'S EXHIBITION, GLOUCESTER.

THOSE who attended the Exhibition of the Bath and West of England Agricultural Society, at Plymouth, in June last, and were also present on the occasion of the late Gloucester Meeting, enjoyed an admirable opportunity of testing the relative characters of the lime-stone, and the clay formations, as to the amount of *water* that they may severally hold in combination.

The early part of the week had given the despairing hay-maker a few bright, warm days, and till noon, on Wednesday, the 13th, making could not be better, but from that time almost incessant rain fully developed the plastic nature of Gloucestershire clay, and the vast prospective utility of the numerous draining-tile machines that were at work among the implements. The yards and their approaches were, consequently, in that state that induced one to seek the ankle-deep mud as a safer path than the slippery surface of the less-trodden ground.

Wednesday, the 13th inst., was allotted to the display of implements, while the judges were occupied with their awards among the live stock. Their duties, however, were completed at so early an hour in the afternoon, that we were by no means prepared to hear the summary edict that excluded all from that department of the Exhibition until the following day. On previous occasions, no difficulty had been ex-

perienced in giving admission after the adjudications had been concluded, and sincerely do we hope that a similar arrangement may be again found practicable in future years. Those, indeed, on whom the task devolves of recording the results of such meetings, can ill afford to lose the advantages which one or two quiet hours of such inspection presents to them.

On Thursday, the 14th, the previously forbidden precincts were opened at six A.M., and our steps were soon turned in the direction of a long shed, where the presence of the peculiar objects of our attention was self-proclaimed.

We were certainly prepared to find the *Dorkings* in great force at a meeting of the Royal Agricultural Society, since, as a farmer's fowl, in suitable districts, it must have acknowledged pre-eminence. But our anticipations, sanguine as they were, from our knowledge of preparations for the contest among those who have been most successful with the breed, were far, very far behind the actual result; and, without fear of contradiction, we hesitate not to say, in concurrence with the judges, that "the Dorking classes were never equalled at any exhibition in the kingdom." Fortunately for the competitors on this occasion, the list of poultry judges included names that would, at once, prevent all cavilling and discussion as to the justice of the awards; for, otherwise, the contest ran so close, that points of comparative insignificance must have been brought into the careful consideration of those who had to pronounce on the merits of birds that could claim so little superiority over their neighbours. The greater credit, therefore, to the judges, and the higher honour to the winners; for triumphs, so achieved, are worth a host of minor victories.

In *Dorking Chickens*, the four first prizes fell in the following succession:—1st. to Captain Hornby; 2nd. and 3rd. to Mr. James Lewry; and the 4th. to T. T. Parker, Esq. The winning birds, No. 752, combined size, shape, and feather, in that degree, that it would be difficult to select any point for improvement. The cockerel was a black-breasted bird, and the pullets brown-spangled, with the shaft of their feathers singularly clear, and in strong contrast with the rest of their plumage. Mr. Lewry, who is a very extensive Sussex poultry dealer, won with one pen of light, and another of dark birds; and, as already observed, he came very close in the steps of the winner. Pen 760, belonging to Mr. E. Terry, of Aylesbury, met with deserved commendation; we should think it probable, that had they been better matched they might have stood higher on the list.

In *Dorkings exceeding one year old* the Knowsley birds resumed the position that seems lately to be occupied by them, as a matter of course, first and second prizes having been here allotted to them. There was no great distance, however, between these and some of those behind; and though we certainly concur with the judgment that assigned their relative positions, not a feather's advantage could have been safely risked by the victors. Mr. Parker, though only fourth, must find no fault with his birds, for even that position, in a contest like the present, conveys just renown.

Where so many birds of the highest excellence were exhibited, it would almost appear invidious to select individuals for special comment; but the commendations were as judicious as the higher rewards. Pen 800, among others, belonging to Mr. Lewry, was thus honoured; and, so far as mere weight was concerned, the cock would have probably borne down the scales against any other bird in the yard, but shape was not so perfect.

Some of the darker red birds alone excepted, the *coloured Dorking* appeared in almost all his varieties of plumage; but when we speak of combs, the double or rosy-combed were in a decided minority; none, indeed, of the prize birds were from this division of the family, though one pen was highly commended, still no imputation must rest upon them from this fact, since, though then outnumbered, they will again, we imagine, be found in the foremost ranks neck-and-neck with their single-combed relations.

Of *White Dorkings* little can be said; some two or three pens alone appearing in the catalogue, and none of any merit. The points of this breed seem hardly known by some of their owners, since in one pen we noticed a single-combed cock with a cup-combed hen, ill-feathered, and worse shaped.

The victors in the *Spanish class*, at the recent Cheltenham and Plymouth Shows, were here also at the head of the list, and well, indeed, did they become both their rank and the confidence of their owner, Captain Hornby; the 3rd and 4th prizes, unlike the Dorking class, were far behind; the cock, in pen 833, had the white face very clearly developed, but was deficient in figure; and in pen 824, a well-shaped fowl was sadly impaired by a manifest redness about the eye.

The *Shanghae*, or *Cochin-China class*, was of very moderate merit; many of the pens, indeed, were utterly unworthy of the occasion, and could only be referred to as what good specimens ought not to be. Mr. Terry's prize pen, however, were singularly compact birds, with such development of their points and general character as is most unusual in chickens of their age; they were good in colour, also, but did not strike us as likely to make large birds. Mr. Punchard came second with some birds, bred, as we imagine, from his recently-imported stock; they had, certainly, considerable merit, but the mottled appearance, induced by the occasional presence of white feathers, is not with us a point of recommendation. Mrs. Herbert took a third prize for a good pen of *White Shanghaes*, and Dr. Gwynne's *Grey Shanghaes*, or *Brahma Poutras*, as they are sometimes called, followed in their rear.

In *Game*, the Black-breasted Red distanced their rivals, though we should have been inclined to have given the preference to the second over the first prize pen; the latter containing a tasselled cock, with one olive, and one blue-legged hen. Captain Hornby showed a pen of Derby red, but the cock had injured his tail on the journey, and thus carried it on one side, placing him out of the race; the hens, however, were of faultless symmetry; Duckwings mustered strongly, and the many admirers of this family had before them specimens of the black, brassy-winged, white, and some few piles; the latter, however, we should have expected in far greater numbers.

As farmer's fowls, those we have enumerated are commonly thought to stand first, whilst *Hamburgs*, *Polands*, and *Malays*, are usually held to be less fitted for that purpose. We do not altogether assent to this view, especially as regards the *Hamburgs*, a fowl, as we believe, well worthy of more general attention at the farmer's hand, but such is the prevailing notion, and it is not, therefore, to be wondered at, that the classes assigned to the latter were but indifferently filled on an occasion which had especial reference to the wants of the farmer and the cottager.

If we except a pen of good Golden-spangled *Hamburgs*, and some Golden-pencilled hens of fair merit, the remainder need no comment.

Geese, as was most fitting, were both numerous and excellent. Our own views, as to the great importance of the Toulouse Goose for crossing with the common breed, were fully confirmed by the fact, that the first, second, and third prizes were borne off by such cross-bred birds. Mr. Parker was eminently successful in this class.

The *Aylesbury Ducks* should have been a better lot, for—the 1st prize pen excepted—there were none of great merit. The successful birds were bred and exhibited by Mr. John Weston, of Aylesbury, and were among the best specimens for their age, four months, we ever remember to have seen. *Rouen Ducks* were in no condition for showing. Drakes and ducks being alike in deep moult. There were, also, two good pens of the *Black East Indian Duck*, which, the sooner it ceases to be called the Labrador Duck, with which country it has no possible connexion, the better for revising the nomenclature of the poultry-yard.

Of *Turkeys* few were very good; but among them Lord Hill's American cock became the deserved object of general attention. The brilliancy of this bird's plumage defied the gloomy effects of weather, so important an auxiliary to colour, and, without one gleam of sunshine, he still remained a radiant combination of all the prismatic hues. Anything, indeed, more gorgeous, and at the same time more striking, from the continued change of tint, as the bird assumed a fresh position, could hardly be conceived.

Our task is now done, so far, at least, as our comments on the birds themselves are concerned; but, while sincerely thanking the council and officers of the Royal Agricultural Society for their acquiescence to the generally-expressed

wish that poultry should be included in their list of live stock, and congratulating them on the great success of the Gloucester Meeting in this respect, it may be permitted us to offer some few suggestions for their consideration before the arrangements of another year may be determined on.

A tent, for instance, will be found to afford a far better, and more commodious shelter for the purposes of a poultry exhibition, both as regards the birds themselves, and spectators also, than the narrow shed in use at Gloucester, where the birds are too much exposed to the weather for the time during which they are required to be there; and, furthermore, the supports of the shed itself sadly interfere with the free progress of visitors; a tent with entrances at each end, and policemen to regulate ingress and egress in different directions, would be found to answer every purpose, and not only would it involve a smaller outlay, but also afford an infinitely better position for the inspection of the birds.

Again, let persons acquainted with poultry be placed in charge of them; several of those who there appeared in this capacity were evidently unacquainted with their work; nor were they provided with proper implements for removing the eggs, and not only are the eggs thus liable to be carried off unbroken, but if allowed to remain, are frequently cracked and devoured by the birds themselves, an evil practice that is afterwards with difficulty only, if ever, overcome. Every precaution should be taken to ensure the fact that the eggs are indeed broken, for exhibitors dread nothing more than the mere probability that this should not be looked to. Summer exhibitions, it will be evident, require more care in respect of this than those which may be held in winter.

Thus far as regards the management of the show itself; and we feel confident, that in briefly alluding to another subject, we are only expressing a very general feeling of regret, that dealers were permitted to compete for the Gloucester prizes. All our principal, indeed, we believe it might be said, *all* our poultry societies, without exception, have wisely determined, that while space is assigned to such dealers as may be desirous of exhibiting specimens, they should be strictly debarred from competition. The reason of this is obvious, since the dealer has only to pick and choose, not out of his own yard, but from the yards of all the farmers with whom he deals, and who, in frequent instances, are restricted from selling to any other person; and thus, where the amateur may possibly pick from hundreds, the dealer has thousands awaiting his selection; if he fails, therefore, it must probably so happen rather from the error of his own judgment than any fault of the birds themselves. So strongly, indeed, do many of those who have done most towards promoting the interest of poultry societies feel on this subject, that few, we believe, will be henceforward willing to enter the lists, without an assurance that so unequal a contest may no longer be persisted in.

JUDGES—Messrs. John Bailey, T. B. Wright, and Wm. Torr.

Class 1.—DORKING FOWLS (Cocks and two Hens, Chickens of 1853).

First prize of 5*l.* to No. 752, viz. to Capt. Hornby, R.N., of Knowsley Cottage, Prescott. Second prize of 3*l.* to No. 757, viz. to James Lewry, of Handcross, Crawley, Sussex. Third prize of 2*l.* to No. 754, viz. to James Lewry, of Handcross, Crawley, Sussex. Fourth prize of 1*l.* to No. 772, viz. to T. T. Parker, of Astley Hall, Chorley, Lancaster.

Class 2.—DORKING FOWLS, MORE THAN ONE YEAR OLD (Cock and two Hens).

First prize of 5*l.* to No. 795, viz., to Capt. Hornby, R.N., of Knowsley Cottage, Prescott. Second prize of 3*l.* to No. 796, viz., Capt. Hornby, R.N., of Knowsley Cottage, Prescott. Third prize of 2*l.* to No. 784, viz., to Right Hon. Viscount Hill, of Hawkstone, Shrewsbury. Fourth prize of 1*l.* to No. 815, viz., to T. T. Parker, of Astley Hall, Chorley.

NOTE.—The Judges unanimously agree that the Dorking classes were never equalled at any exhibition in the kingdom.

Class 3.—SPANISH FOWLS (Cock and two Hens).

First prize of 5*l.* to No. 826, viz., to Capt. Hornby, R.N., of Knowsley Cottage, Prescott. Second prize of 3*l.* to No. 825, viz., to Capt. Hornby, R.N., of Knowsley Cottage, Prescott. Third prize of 2*l.* to No. 833, viz., to W. B. Mapplebeck, Bull Ring, Birmingham. Fourth prize of 1*l.* to No. 824, viz., to J. P. Adams, of Newland, near Malvern, Worcester.

Class 4.—COCHIN-CHINA FOWLS (Cock and two Hens, Chickens of 1852).

First prize of 5*l.* to No. 864, viz., to Edward Terry, of Aylesbury, Bucks. Second prize of 3*l.* to No. 856, viz., to Charles Punchard, of Blunt Hall, Haverhill, Suffolk. Third prize of 2*l.* to No. 847, viz., to Mrs. S. R. Herbert, of Powick, near Worcester. Fourth prize of 1*l.* to No. 870, viz., to W. C. Gwynne, of Sandback, Cheshire.

Class 5.—GAME FOWLS (Cock and two Hens).

First prize of 3*l.* to No. 887, viz., to N. N. Dyer, of Bredon Manor House, Tewkesbury. Second prize of 2*l.* to No. 899, viz., to Edward Lowe, of Comberford Flour Mills, Tamworth. Third prize of 1*l.* to No. 890, viz., to Edward Glover, of Olton, near Solihull, Warwick.

Class 6.—HAMBURGH FOWLS—Golden and Silver-spangled, or Golden and Silver-pencilled (Cock and two Hens).

First prize of 3*l.* to No. 928, viz., to William Ludlam, of Bradford, York. Second prize of 2*l.* to No. 923, viz., to J. Jennens, of Moseley, Birmingham. Third prize of 1*l.* to No. 918, viz., to Thomas Lowe, of Whateley, Fazeley, Staffordshire.

Class 7.—MALAY FOWLS (Cock and two Hens).

First of 3*l.* to No. 944, viz., to A. C. Sayers, of Clanville House, Andover. Second prize of 2*l.* to No. 1110, viz., to Henry Worrall, of Knotty Ash House, near Liverpool. Third prize of 1*l.* to No. 949, viz., to W. B. Mapplebeck, Bull Ring, Birmingham.

Class 8.—POLAND FOWLS (Cock and two Hens).

First prize of 3*l.* to No. 965, viz., to Christopher Rawson, of the Hurst, Walton-on-Thames. Second prize of 2*l.* to No. 966, viz., to William Cox, of Brailsford Hall, Derby. Third prize of 1*l.* to No. 970, viz., to W. G. Vivian, of Singleton, Swansea.

Class 9.—TURKEYS (Cock and two Hens).

First prize of 5*l.* to No. 976, viz., to Right Hon. Viscount Hill, Hawkstone, Shrewsbury. Second prize of 3*l.* to No. 975, viz., to John Fairlie, of Cheveley Park, Newmarket. Third prize of 2*l.* to No. 981, viz., to R. T. Head, of the Briars, Alphington, Exeter. Fourth prize of 1*l.* withheld.

Class 10.—GEESSE (Gander and two Geese, hatched in 1853).

First prize of 5*l.* to No. 1005, viz., to T. T. Parker, of Astley Hall, Chorley, Lancashire. Second prize of 3*l.* to No. 1003, viz., to T. T. Parker, of Astley Hall, Chorley, Lancashire. Third prize of 2*l.* to No. 993, viz., to Capt. Hornby, R.N., of Knowsley Cottage, Prescott. Fourth prize of 1*l.* to No. 1004, viz., to T. T. Parker, of Astley Hall, Chorley.

Class 11.—AYLESBURY DUCKS (Drake and two Ducks).

First prize of 3*l.* to No. 1013, viz., to John Weston, of Oxford Road, Aylesbury. Second prize of 2*l.* to 1019, viz., to Miss L. C. Stow, of Bredon, Tewkesbury. Third prize of 1*l.* to No. 1026, viz., to Miss Wilcox, of Nailsea Court, Bristol.

Class 12.—ROUEN DUCKS (Drake and two Ducks).

First prize of 3*l.* to No. 1112, viz., to Henry Worrall, of Knotty Ash House, near Liverpool. Second prize of 2*l.* to No. 1033, viz., W. W. Rowe, Longbrook, Milton Abbot, Devon. Third prize of 1*l.* to No. 1031, viz., to Capt. Hornby, R.N., of Knowsley Cottage, Prescott.

Class 13.—DUCKS OF ANY OTHER VARIETY (Drake and two Ducks).

First prize of 3*l.* to No. 1035, viz., to H. S. Pigott, of Brockley Court, Bristol. Second prize of 2*l.* to No. 1036, viz., to H. S. Pigott, of Brockley Court, Bristol. Third prize of 1*l.* to No. 1040, viz., to Miss S. Buckle, of Moat House, Uckington, Cheltenham.

THE CULTURE OF A ROOD OF GROUND.

AUGUST.

THE present being the principal harvest month, and thinking there are many growing a part of their rood of ground with *Wheat*, as is the custom generally with allottees in this part of Suffolk, where I reside, I will endeavour to give a brief description how I manage my own. On large occupations, different methods are practised in cutting *Wheat*—such as mowing, bagging, &c.; but the plan I have always practised has been the old-fashioned one of reaping with the reap-hook, and to cut it as close to the ground as I can. As the work in this way can be performed much cleaner and neater than in any other way, I recommend this plan to occupiers of a rood of ground, in preference to any other, as being the best and most economical. The best time I have found, by experience, for cutting, is as soon as the kernel is sufficiently set, so that the inside cannot be pressed out in a moist state. The general fault is in letting it stand too long before it is cut. As soon as the crop is sufficiently harvested, I gather it into a heap, or stack it, and cover it well with straw, to prevent the wet getting in till I have an opportunity of thrashing it. I prefer this plan to housing it, as it may be got up earlier, and will be fit to thrash sooner than if stored in a barn.

My plan of growing my *Wheat* crop has always been (for several years) to sow it on the ground where I have previously grown my root crops, either *Potatoes*, *Beet*, or *Swedes*, and that without digging the land, and I have always in this way had good crops. My piece of *Wheat*, at this present time, is growing on the ground where my crop

of Swedes and Sunflowers stood. It was put in without digging, and is (I think I may venture to say) as fine a piece as can be seen in the neighbourhood.

The plan I pursue in preparing my land for a Wheat crop I shall give an account of at the proper season. I am not advocating this system merely for the object of saving the labour of digging, but because I have found, from experience, that it answers the purpose best, provided the ground where the root crops were previously grown had been well cultivated between the rows, and been kept thoroughly clean. It is said, the best evidence of good farming is—"to feed the land before it is hungry, to give it rest before it is weary, and to weed it before it becomes foul." I have proved, by experience, the truth of the latter remark, respecting the impropriety of not attending to the cleaning the land immediately after the Wheat is taken off, the stubble being first cleared away. I have found the best treatment for cleaning the land after a Wheat crop to be a thorough good digging with the fork, taking out the rubbish as you go along, and then letting the ground lie as rough as it can be made during the winter, to get the benefit of the frost; and in the spring, as early as the weather will permit, wheel on the manure, and give it another good digging with the fork, and prepare it for receiving the spring crops. Mr. Errington, in his excellent article on "Allotment Farming for June," says: "I have repeatedly known as much time wasted in hoeing and raking, as would have dug over the plot in question; and who can for a moment place the two operations on a par as to their utility?" I confess I have been foolish enough to try this experiment of hoeing, instead of digging, thinking I should be saving labour, but I have dearly paid for my folly, for instead of benefiting by the operation, I have found it to be a serious disadvantage, more particularly with a wheat stubble. I am perfectly convinced, from dear bought experience, that there is no operation, short of a thorough good digging, that will effectually clean the land after Wheat to make it in a fit state to receive future crops.

If a portion of the ground previously occupied with Wheat be required for early spring *Cabbages*, it must be supplied with a liberal quantity of manure previous to digging. The method I pursue, in planting my spring *Cabbages*, and arranging other crops between them, I shall give particulars of at the proper season for planting them out. If a portion of the Wheat ground be desired for a crop of *Stone Turnips*, it must be prepared immediately after the Wheat is cut, by giving it a dressing of manure, and a good digging. The seed may be sown either broadcast, or in drills eighteen inches apart. I prefer the latter plan, as the ground can be kept clean much better, and the crop produced more regular.

Much has been said and written respecting the advantages of planting *Potatoes* early in the autumn, but from experiments that I have made, I have not found any advantage arising from the practice, particularly this last season; the wet being so incessant many of the tubers were entirely rotted, and, in consequence, they did not come up so regularly as those planted early in the spring; indeed, up to the present time, I never saw my Potato crop looking better than it is this season; and, to all appearance, they promise to be an abundant crop. I have this year a crop of *Potatoes* and *Beet* growing on the same piece of ground, in alternate rows, and, from present appearances, both crops promise to be very productive. From the extra air and sunshine each crop gets in this way, they appear to grow more luxuriantly than they would if each were growing separately.

If the early *Spring Cabbage* seed have been omitted to be sown the last week in July, they should be sown the first week in this month, in the way I have previously stated for July.

The land being now occupied with all the principal crops, the chief business to be attended to now is to keep it free from weeds.

Onions should be taken up the latter part of this month. The plan I pursue in harvesting them is to spread them on a board or canvass, for several days, till the tops are quite withered, and then tie them up in bundles or ropes, and hang them in a dry, cool place. They will keep sound in this way through the winter, and free from shooting till late in the spring.

Earth or road scrapings should be collected this month for *compost* heaps.

In my notes for July in *THE COTTAGE GARDENER*, I intimated that I would give an account of my *hand-cultivator*. It being an implement that I have found of great service, I recommend it to all occupants of small holdings. The following is a brief description of it:—The head of it is formed with two iron plates, two feet long, two inches wide, and half-an-inch thick. These two plates are screwed together at each end, sufficiently apart from each other to admit of the prongs being fixed in. The teeth, or prongs, are made with a screw and nut, so that they can be shifted to any space required. In the centre of the head, or two plates, is fixed a strong iron, twelve inches long, with a socket at the end to receive the handle, which is made of wood, four feet long, with a cross-bar eighteen inches long, fixed in the end to draw by. The iron in the centre, which the handle is fixed to, is so formed that one of the prongs is fixed in it about six inches from the head. The number of prongs that I have to fix to it are five, and the length of them are fifteen inches. They are made with chisel ends, and the lower part of them are half-circular, and the front of them brought to an edge, so that they can cut through the soil much easier. At each end of the head-plates is fixed an iron plate, the same width as the head ones, and fixed to the centre iron, where the socket is made to receive the handle. Thus the whole consists of iron, except the handle, and in form resembles the horse cultivator. The cost of it complete was 15s. I have also another set of prongs to fix to this implement to use as hoes, with the ends made into a flat triangular form, five inches wide, with sharp edges, similar to those used with the horse-hoe. I am fearful, from the imperfect description I have given of this implement, it will not be sufficient to be understood, but it is the best account I am capable of giving. In using it, it is drawn backwards with a leather strap fixed round the waist, and by making a sudden pull at each step, a man may draw with considerable force. I am indebted to a gentleman, who honoured me with a visit last summer, for a description of this implement, who had one in use.

It appears a similar instrument to the above is used in America. The following is an extract from the "Working Farmer" for June, (published in New York, and kindly sent me by a friend):—"The little instrument called the hand-cultivator may be used after thorough weeding to great advantage, and with superior economy, as compared with the hand-hoe. In well tilled garden soils, one man, with this little instrument, can do the work of twenty with hand-hoes; it is only useful, however, to pass between rows, as it cannot remove the weeds which are resident in the rows."

JOHN SILLETT.

BRAHMA POUTRA FOWLS.

HAVING a pair of Brahma Poutra fowls (one of the pairs sent over by Dr. Bennett, U. S., to the Metropolitan Show, at the same time that he sent those for the Queen, Dr. Gwynne, and Mrs. Hosier Williams), I have been anxious to ascertain if they are distinct breeds. I have been in communication with Dr. Bennett, and, as he has gone to settle at Iowa, he referred me to the gentleman who has succeeded him, and this day I received a letter from him in which he states: "Dr. Bennett having gone to settle at Iowa, and that being so far back in the western country, he will not be able to send you any Brahma Poutra fowls; but he has left all to me. I am an old breeder of poultry. I keep the very best breeds, and the best bloods, to be found in this country. I keep a great variety of fowls, and I also have free access to all of the most careful breeders' stocks in this part of the country; and I can get anything I want that is nice. I know all about the Brahma Poutra fowls that Dr. Bennett sent to Dr. Gwynne, and Mrs. Hosier Williams, for I went to Boston and shipped them for the Doctor. They are certainly a distinct breed of fowls, and were imported from India, and not China, as many suppose; they breed from a light colour to a dark grey; feathered, and clean legs, but always yellow; pea and single comb, but the pea comb is the most preferred

in this country; they are not the Chittagong fowl, they are an entirely different looking fowl; the Chittagong are worth nothing to keep.

"With us Cochin-China and Shanghae fowls are distinct; Cochin-China fowls have no feathers on their legs, always smooth, close feathered, and of a different form, and much higher on their legs than the Shanghaes. The Shanghaes are more feathery, their feet and legs are heavily feathered, and their legs are much shorter than the Cochins; our Shanghaes are of all colours, from a pure white to jet black, and the Cochins are red or brown; all of these Chinese fowls are known here by the importers names, such as Marsh, &c."

Having given you the opinion of one of the best breeders of poultry in the United States (and it must not be forgotten that this gentleman assisted Dr. Bennett to write one of the largest, if not one of the finest, works on poultry), I think it may, in a measure, set at rest the question, whether the Brahma Poutra fowls are a distinct breed.—W. B. S.

[It will require the experience of more than one season to settle this question. If they continue to breed chickens like to themselves, and these chickens produce others equally true, it will go far towards establishing them as a distinct variety.—Ed. C. G.]

BEES CONSUMERS OF HONEY-DEW.

As I was looking over, the other day, a late number of THE COTTAGE GARDENER for any notices as to the good or ill success of your apiarian correspondents, my eye was arrested by a note at the foot of one of the columns, acquainting your readers with the (supposed) fact of my having emigrated to Australia. This reminded me of an intention I had formed of winding up my contributions to your paper with a few words of "farewell," before my actual departure (an event still *futuro*); and I do it now with the more willingness, as, within the last few days, I have become eye-witness to the fact, which has been often doubted about in your columns, and of which, it should seem, very few bee-keepers have had personal knowledge; I allude to the question, whether bees gather *honey-dew* or not. I am happy now to be able to reply to the question in the affirmative, though I once doubted the fact as strongly as any one, never, till the day before yesterday (July 12), having distinctly observed hive-bees collect the "dew."

I chanced to be wandering in the vicinity of St. Breladg's Bay, in the Island of Jersey, the day being bright with a hot sun, when my attention was at once caught by a loud humming in some pollard oaks, beneath whose shade I took refuge from the heat. On looking up, I was delighted to see a large number of my old friends busily at work sucking a sweet glutinous substance from the oak leaves, some of them being either so heavily laden, or so drunk, with their feasting, that they found it difficult to fly away. On minute inspection of the trees, I found that this substance was none other than the common secretion ejected from the stomach of a green aphid, which abounded on these oaks, differing in no respect, so far as I could see, from the common aphid (except that it seemed to be a small kind); nor did the "dew" differ, either in taste or appearance, from that which I have often seen every summer on almost every kind of forest-tree in England, and which I knew to be a similar secretion ejected by the aphid fly. There were such vast quantities of aphides, and all so eager to discharge the contents of their stomachs, that the "dew" might be seen in the sunbeams dropping on all sides, very much as if a fine Scotch mist were falling.

I may observe, that this has been a singularly bad honey year in this island, the hives having, till quite recently, remained quite as light as they were months ago at the close of winter. Query: Is this excrement of the aphid of a more saccharine quality this summer than is ordinarily the case? (for I maintain it is *very rarely* that bees will touch it); or else, Are the bees so hard pressed for food that they find it "Hobson's choice" with them this year—"this, or none?"

Were it not that I dispersed my apiary in February last, and have been a stranger to the active work of a bee-master

this spring, with plenty other work on hand, I should, doubtless, have continued to bore some, and to amuse others, of your readers with notions of my bee-experience, as in former seasons. I go now to a land where the honey-bee is said to thrive amazingly; doubtless, I shall resume my favourite pursuit, as time and opportunity shall permit (please God to favour my voyage and its object), and I may, with your permission, forward some account of the bees of Australia, and my individual success in their management, from time to time, as occasion shall serve. In the meanwhile, allow me to subscribe myself still a hearty good wisher to your apiarian readers in particular, and in general to all your subscribers. A COUNTRY CURATE.

[We are selfish enough, and very many of our readers will be equally so, to rejoice that the writer of this welcome letter has not yet departed for the other side of our globe, because there is yet a hope that some tempting preferment may occur to keep him among us. Should it be ordained otherwise, and another sphere of usefulness is in store for him, he will carry with him our sincere wishes for his welfare, and we assure him that his handwriting will always be a welcome sight.—Ed. C. G.]

POTATO CROPS—DUCKS.

You ask particulars respecting the Potato crop. In this neighbourhood (on the Cotswold Hills), they are looking very well, seldom better, with no appearance of disease, that I have seen. A gentleman, however, informed me that the leaves of some of his had the appearance of the disease.

A plan that I have adopted for the last three years, and with much success, is the following: I plant in rows, three feet apart from row to row, running north and south; and when the sets are placed in the row, I have them well covered with burnt ashes from weeds, &c., a layer of dung being underneath. In this way I have had very good crops, and very free from disease. Mine are looking well now; about an acre; they are planted as I have described. I have also some planted a yard apart *each way* with single sets, and others in clumps, four together, but a yard each way from clump to clump. If you care to know the result, I will send it you at digging time. (Pray do.)

A correspondent in your paper (but I cannot put my finger on the place) says, he finds that the *incubation of ducks' eggs* takes place with him in twenty-six days, though thirty days is the time allowed. I have found the same; and I should like to know whether the opinion I have formed is correct. It is this: that when duck eggs are put under a hen they are hatched, on account of the greater warmth, sooner than when under a duck. I have never seen such a fact stated, but it has struck me as probable.

CLERICUS R.

ON THE MANAGEMENT OF SILKWORMS.

WITH COMMENTS AND ADDITIONS.

By the Prior Jacopo Ricci.

AN ANALYSIS OF THE PRECEDING TREATISE.

(Concluded from page 288.)

THE Silkworm is an insect brought from the South of China, as many writers tell us. There are various traditions as to how and when the breeding of this useful creature was introduced amongst us; but that which is of most importance is, that the agriculturist should shut his ears against all the old women's absurd stories regarding the treatment of the worms in their own country, which may lead to the belief, that in this our variable climate they do not require the careful attention which is really essential, and for lack of which, the worm now naturalised amongst us has been neglected as less valuable than under proper management it will become.

Those who wish to cultivate the worm with success

should begin by a good choice of seed or eggs, which they should keep carefully, having obtained it from their own moths, in preference to buying of those who deal in it. When, however, it is absolutely necessary to purchase seed, let it be examined, to ascertain, by certain signs, whether it is likely to turn out good, and especially if it has been carefully preserved according to the best rules. Again, as to the quantity of seed to be hatched—an exact calculation of the quantity of food you are likely to have should be made, for it can never be to the interest of the owner to have so many worms as will oblige him to buy food day by day, or to hire persons to tend them. The seed should not be hatched till the leaves of the Mulberry appear; and there need be no hurry in bringing them to life early, as should cold check vegetation, the worms will suffer from want of food. The system of hatching the eggs by means of the heat of the body is not to be tolerated, as it exposes the worms to many dangers and diseases. Till we, in Tuscany, understand the necessity of a well-regulated warmth for hatching the worms, we can never expect a result proportionate to the care and attention bestowed upon these creatures, namely, an abundant harvest of silk.

He who is to have the management of Silkworms should take pains to learn the most approved method of treating them, and should anxiously watch that the necessary care be bestowed upon them, not only by day, but by night also.

Amongst ourselves, it appears that women only can be trusted to tend the worm; whereas, in other countries, where the business is better understood, men are found much more docile, and even the most stupid among them are able to learn the use of the thermometer and other necessary instruments.

The hatching the eggs, and the treatment of the worms the few subsequent days, influence greatly their future well-doing. One of the commonest mistakes amongst us, is the keeping the worms too closely crowded in; and when the beds are changed, it is surprising if multitudes are not suffocated, in consequence of the mischievous custom of removing them in handfuls, and allowing them to remain heaped together for no short space of time. The regular changes of the worm are not attended to; they are disturbed at all times, and the fatal result is attributed to absurd causes, instead of to the true one—want of proper care and attention. Again, no rule is observed with regard to feeding, either as to quantity or frequency, consequently the leaves are wasted and the worms injured. Besides the most scrupulous attention to cleanliness, it is essential to maintain the atmosphere of the apartment even and pure.

Those people who best understand the art, and who derive the greatest advantage from it, so tend the worms, that whether the season be favourable, or otherwise, the harvest is safe; whilst with us, all depends upon fine weather.

Those who adopt the new plans do not remove their worms from the hurdle when ready to spin, but form the bush there for them, so arranging them that each may have ample room for their work. These, and other new suggestions, will excite the spleen of those women who consider themselves adepts, and, if obliged by an absolute command of the master to adopt them, they will most likely contrive that they shall not answer; for ignorance and obstinacy are usually accompanied by malignity.

The time that the cocoons remain in the bush varies with different circumstances, and an experienced eye is needed to show when they are ripe. The taking them off too soon, as well as leaving them too long, is injurious to the silk.

No careless or ignorant person should be allowed to gather the cocoons, for if the operation be not properly attended to the silk may be very much damaged. The cocoons having been placed where they will neither ferment nor become too dry, should, as soon as possible, be taken to market; the unripe and imperfect ones having been carefully removed. It cannot be expected that the eggs should be prolific if the cocoons which are to produce them be not most carefully chosen. The husbandman seems to forget that in this, as in other branches of agriculture, a fruitful harvest must not be looked for if he neglects the seed. In choosing the cocoons, some regard must be paid to the texture of the silk, as well as to its colour; but as this differs in different localities, and under different circumstances, no

certain rule can be laid down, but experience will be found the best guide.

As to the signs by which to distinguish the male from the female cocoons, none are certain, but those which are least often wrong should be attended to; as also the number of cocoons necessary to produce a certain height of eggs.

The apartment where the eggs are to be laid requires great care, that is, the temperature must be even; a fact which our people seem to forget, but which is sedulously attended to in foreign countries where it is well understood that the well-being of the worm depends on such precaution. Care, too, must be taken of the cloths containing the eggs—the room where they are stored for the winter must be cool, dry, and impervious to frost and vermin.

With regard to the diseases prevalent among the worms, it is essential that all old women's tales should be rejected, for they merely provide mendacious defences of obstinate ignorance.

The Silkworm, like other insects, was formed for liberty, and, if for his own advantage, man breeds it in confinement, he should keep in mind its natural constitution, and endeavour to accommodate his treatment to that of nature, by giving it pure, warm, dry air to breathe, remembering, that the various diseases to which it is subject depend not so much upon its physical constitution as upon want of attention at the most important epochs of its life. It is important to have good eggs, which must be carefully preserved and hatched in uniform temperature.

In the four first stages, cleanliness, uniform warmth, and ventilation, are necessary. The changes, or moultings, should take place at the same time in all the worms, and this depends mainly on their having plenty of room, a regular quantity of food, and fresh air in the apartment; if these are wanting the creatures become languid and sick. The most fatal diseases appear after the fourth change; different writers call them by different names, but none have been able to tell us their original cause; however, it appears likely they are occasioned by the immense quantity which, in proportion to their size, these insects eat in a state of confinement.

It will be well to conclude this interesting subject with the following axioms of Count Dandolo. He says these fatal diseases would be avoided, if

- 1st. The worms are kept thinly scattered on the hurdles.
- 2nd. If the prescribed temperature be carefully maintained.
- 3rd. If the air be never permitted to stagnate.
- 4th. If, when the external air is damp, and the internal evaporation copious, fires are lighted to purify and rarify the atmosphere.
- 5th. If the worms have plenty of light, the most valuable stimulus to animal life.
- 6th. If the beds be changed sufficiently often to prevent fermentation.
- 7th. If the leaves be given as dry as possible.
- 8th. If the sulphuric acid and nitre are frequently used to destroy the various noxious exhalations generated in the apartment, as we have before had reason to remark.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

SEEDLING POTENTILLAS (*B. & B.*).—We were not aware, until we received specimens of these, that there were so many beautiful varieties at the command of the gardener. Nos. 32 and 46, orange, veined upwards from the base with crimson. No. 21, deep blood colour; very large. No. 19, a very pale clear yellow. No. 51, scarlet. No. 21, light maroon, with dark veins. Nos. 22 and 62, pale yellow, but not so good as 19. Nos. 22 and 49, dark maroon. No. 64, scarlet, with yellow rays rising from the base. There are some others, all very rich and fine, but closely resembling those we have specified.

TRIFOLIUM INCARNATUM SOWING (*Clericus R.*).—It may be sown

as late as the second week of September. The *cheapest* structure for preserving plants in through the winter is a pit with sides made of turf.

GOOSEBERRY (S. S.).—The derivation of this name is very uncertain. In Dutch it is *Kruisbes*, or *Gruisbes*, derived, perhaps, from *Kruis*, the Cross; and *Bes*, a berry, because the fruit is ready for use just after the Festival of the Invention of the Cross; just as, in the same language, *Kruis-haring* is a herring caught after the same festival. Gooseberry seems an easy corruption of *Gruisbes*. Some writers, however, consider that Gooseberry is merely a corruption of *Gorse-berry*; but this requires that we should assume that *gorse*, means any kind of prickly bush, whereas it seems to be confined to the furze.

COLD FRAME (Cymro).—All the plants you name may be wintered in a cold frame, if you keep it elevated, and keep frost and damp out of it. The position of such a frame had better be south, if fixed; if moveable, east and west will do in spring and autumn, and to give shade you might turn its high side to the south in summer. The window in the hall, with a south aspect, will winter any of them well, if you can give air, and keep out frost. The Fuchsias, Cupheas, and Calceolarias had better remain in the cold frame; and, if you can secure these conditions to your window, you might keep the Cinerarias and Verbenas there. After this, by window and frame, securing nice plants, we would not advise you to trust them at all to the heat of a badly-managed greenhouse, with which you cannot interfere, but we would keep them in windows, &c., as you would see, from some papers on a neglected greenhouse, lately, that in the case of most of the things you name, air and coolness are essential to their health and freedom from insects, as they come into and approach the blooming state.

WIREWORM IN A VINE BORDER (A Subscriber).—We have never found anything so effectual as trapping them. Cut several turnips into slices, insert them all over the border, and go round and examine all the baits every morning. If so numerous as you say, we expect you will find a number in each bait trap. Are you sure that withering and dying at the points of the shoots is not as much owing to sun and deficient air as to the wireworm?

STANDARD GERANIUMS (Chas. F., Litchfield).—Mr. Fish, will, probably, have something to say on this soon—meanwhile, the strong-growing scarlets will be easiest managed. After fairly come into shape, they need not have green leaves kept on them in winter. If you tried any Florists' Pelargoniums, they must be kept growing slowly during winter. Your room, that you can command a temperature of from 70° to 80° from March to October, will be a useful one; but you must try and give these standards some 10° less, at the most.

FUCHSIAS PRESERVED IN COLD ROOMS (Ibid).—You may either cut them down or not. You need not even prune them until they begin to break in spring; all they require is to be kept from frost, rather dry than otherwise. Your idea of plunging the pots or roots in a box is a capital one. If the material is damp, you will want little water in winter. A blanket to envelop the tops in frosty weather is another good idea. Certainly, we should not cut down such plants as you name. *Glory*, &c., being rather scarce, we would try and keep every twig from frost in winter, in the way you propose, and then, in spring, you can easily get a number of cuttings, without injuring your plants; and won't your neighbours be after them! Very likely, the large plants you saw in greenhouses were not cut down, but the shoots merely pruned back in spring; but it is hard to say, without seeing, whether the wood was old or young, as gardeners, from a cutting in August, will have giants in full bloom in July. See what is said of those at Northampton. In the room you speak of, and the light it enjoys, you might do the same, if less plants would not suit you better.

RIVALLING HARRY MORE'S GERANIUMS (Ibid).—The soil should be light, and when coming into bloom top-dress with a little decayed dung. This treatment will keep them good for a number of years. Similar treatment would answer your favourite *Unique* in summer, but it must be kept green and growing in winter; if in a temperature little below 45°, all the better. We have just now some nice plants of this beautiful thing, some four feet in height, and ranging from two to three feet in diameter, a mass of bloom; and they have not been shifted for several years, but top-dressed every season, and often more than once.

CINERARIAS IN A COLD ROOM (Ibid).—You can keep them there just as you would do in a cold pit, but much frost must not come near them, and you must keep them green, or nearly so. The keeping them dry, and without light in a box, like scarlet Geraniums, will not do; but if you can place them in small pots, and then plunge them in a box, you will keep them more easily during the winter, as the roots will be more equal as respects moisture and heat.

WINDOW GARDENING (A Cottager).—You can grow all the plants you mention in the large window, with a west aspect, but you must give air in hot afternoons, and when very bright, interpose a muslin curtain between the plants and the glass when the sun is brightest. In winter, as you have a fire frequently, you would also require to light one on purpose in very severe weather. In slight frosts it would be sufficient to remove the plants from the window, as so often recommended by Mr. Fish. A little fire we consider better than no fire; but if you should happen to have a strong one, see that the plants stand in the coolest place, and moisten their foliage with a sponge often.

AUNT HARRIET'S GERANIUMS (Ibid).—We are glad you have studied that paper—one of Mr. Beaton's best hits. We reply to your questions in turning out after flowering. Keep them in the sun; in heavy rains, lay them on their broadsides, and never give them more water than will just keep them from drooping before pruning them. The kitchen window, without sun, will not do so well for keeping plants as the one referred to. The plants will do very well at a bed-room window in summer, and in mild weather in winter, and in a moderate frost, with the precaution of shutters and cloth covering, without fire; but with your first named window, three yards wide, you will be able to keep all you require best and easiest.

FUCHSIA FOR WINDOWS (Ibid).—Mr. Fish has given full directions, and lately. Something in answer to the previous correspondent will suit you; but the subject will obtain more attention, ere long, as such earnest people we always feel a pleasure in obliging.

A VERY POOR GARDEN (M. E. v. D.).—The oddest thing we ever heard of is your garden, which you say is "so poor and gravelly, that nothing will grow in it but Roses!" Our own garden is made out of the least promising materials on the face of this earth. A stone mason's yard, a pond for eels, a wild bank for snails and slugs, a swamp, which produced nothing for years but mare's tails, and the old mare still persists in throwing them up (*Hippuris vulgaris*), have been improved in one year to grow any thing right well, *except* Roses, and it will be a year or two before we can get it rich enough to grow them! As for slugs and snails, we are very near rid of them, after killing some thousands, going about after rain, and always in the evening, when they are on the move. The kind of gravelly soils which grow Roses only want to be trenched thirty inches, and the largest stones picked off, then old cow-dung, or at least very rotten dung of some sort, to be liberally worked in, and in hot weather to put some mulch on the surface, to grow any plant worth growing; but slugs, green-fly, and blights, will destroy things in the best garden, unless they are prevented by a constant warfare.

STIFTIA CHRYSANTHA (A Devonian).—Very likely this may be purchased, as you say, and some more of the Brazilian selection have found their way here, and more especially to Ghent. M. Van Hout was once a collector of plants out there, and he has kept up his correspondence ever since with those parts. We hold it to be of very rare occurrence to find such authentic accounts of a tithe of the new plants that are offered every season, as those from Mr. Gardiner's journals. Messrs. Henderson and Son, of the Wellington Road Nursery, sent us their very rich catalogue but the other day, the only catalogue of 1853 which we have yet received. In it we see the *Velozia candida* and *Meternichia principis*, but not the *Stiftia Chrysantha*. No doubt, some more of the Brazilian plants in our lists are on sale, and our list will be a sure guide to purchasers; and the trade can always sell anything we recommend, either here or in America; and they are never slow to acknowledge to us, and to their customers, that THE COTTAGE GARDENER is the surest authority about new things, and the most independent of the garden periodicals. To help to keep down frauds, we gave the authorities for the most of the names, so that no other *Stiftia* but that by Mikan can be a true one.

CHINESE AZALEAS (Indicus).—The Society never published Mr. Green's way of putting new Azalea heads upon old shoulders; perhaps he forgot to keep the promise. Mr. Pitt, of Little London, in the parish of Ledbury, Herefordshire, was in the habit of doing with Apple-trees in that, and the surrounding parishes, for more than thirty years, and probably to this day, the same as was done with the Azaleas in question. Mr. Pitt, instead of cutting off the head from an old Apple-tree, and putting on it two or three grafts of one-year-old wood, and hardly that, sometimes went over the whole head and cut back all the leaders, and grafted them with two or three years old wood, with flower buds on; and for the following three or four years would prune away so much of the old head that none was left by that time.

THE ROSE BLAIRII (A Kentishman).—This very beautiful summer Rose, like a great many others of the same breed of Hybrid Chinas, is too strong a grower to do well as a standard for the first few years, and more especially if it is pruned as standards usually are. It will not bear the knife at all at first, nor until its natural vigour is curbed in some other way. The best way we know of to deal with this strong class at first, is to nip off the point of *every shoot* that is made all through the season, the moment it is six inches long; to cut out entirely all new shoots that come after the end of August; then to let them alone till after the flowering was past the following summer, and then to prune them, and *only then*; this pruning to be merely the cutting out of such wood as is too crowded, or too old to produce good flowering shoots; but after all, the finger and thumb through the growing season, and to get rid of the unripened, late wood, before the frost catches it, is the grand secret. You shall hear more about *Blairii* very soon.

TRIMMING SWEET BRIAR HEDGES (Goddess).—The best time of the year to trim Sweet Briar hedges, and all other hedges made of deciduous plants, in our climate, is the last half of September, but they will do pretty well at any time, from September till the sap or bleeding makes them dangerous to cut in the spring; and all these hedges, *after they attain full size*, ought to have another "trimming" in June, for appearance sake.

COMMON CHINA ROSE CUTTINGS (Ibid).—For cuttings in the open air, the end of July, and the middle of October, are the best periods; the former for little side-shoots taken off with a heel, and ninety-nine out of a hundred of such ought to root the same autumn. October is the best time to put in "all sorts of wood" cuttings of the China Rose; that is, all pieces of the young wood that is ripe enough not to damp off.

EIGHT-PETALED PELARGONIUM (G. A.).—There will be little probability of its seed producing eight-petalled plants.

CANKERED APPLE TREES (Suburban).—The idea of curing canker by merely cutting out the diseased part, and putting on a plaister, is very erroneous. The origin of the evil should be removed, which is probably an ungenial subsoil. Take up the young trees in October, and plant them on stations, as recommended by Mr. Errington.

CABBAGES (Ibid).—Hand-picking is the only means of removing caterpillars from the firm-hearted Cabbages.

LATTICED FLOOR FOR POULTRY HOUSE (A Subscriber).—Arrange the bars parallel to each other, certainly not in squares; the bars 1½-inch square, and the same distance apart; the edges need not be rounded.

The floor should be, at the least, two feet from the ground, and arches left to introduce a hoe to remove the dung. The arches to be closed by doors in cold weather.

POTATO MURRAIN (*S. Yellot*).—This is no more caused by the employment of guano than it is by the employment of the electric telegraph. The disease occurs in countries and places where guano never was used.

CONIFERÆ (*A Subscriber*).—The prices we have named are those at which they can be obtained of any large grower of them; but we cannot recommend tradesmen.

CAPTAIN HORNBY (*Cochin-China*).—The direction is, Capt. W. W. Hornby, Knowsley Cottage, near Prescott. We are quite sure he will answer the question if you write to him.

ANTS IN FRUIT-TREES (*E. L.*).—The trees being much infested with aphides, the ants go to eat the sweet excrementitious matter emitted by these insects.

CUTTINGS (*W. H. O.*).—Our offer was so ill-appreciated that we have declined entirely to take upon ourselves the thankless trouble.

BAKER STREET POULTRY SHOW (*A Country Cousin*).—It will be open from 8 A. M. to 9 P. M.

QUARTERN (*K. H., Dublin*).—By this term in England, a quarter of a peck is intended. The weight of grain it will hold, varies, of course, with the nature and quality of that grain.

WILLIAM ADAMS (*C.*).—Your truly liberal and most acceptable donation, and the announcement of your purpose to continue it weekly, has been received. We wish that you would send us your address in a sealed envelope, that we might send it to "The Authoress of My Flowers."

NAMES OF PLANTS (*Rev. R. M. E.*).—The good old *Calendula officinalis* var. *pleno*, or Double Marigold. It is really one of the most beautiful of our double-flowered Annuals, and is neglected only because it is not rare. Your supposed *Alonsoa*, is, we think, a *Silene*; let us see a flower. (*Bretingby Cottage*).—No. 1. *Platystemon Californicus*. 2. *Erodium cicutarium*, and 3, probably, a white variety of it. 4. *Teucrium scorodonium*, or Wood Sage. 5. *Cotyledon umbilicus*, Navel, or Penny-wort. (*An Old Subscriber*).—We think it is *Ostrya vulgaris*, or Hop Hornbeam. (*A.*).—A small *Nigella*, probably *N. courcdata*. (*G. F. W.*).—We cannot attempt to tell from specimens Nurserymen's varieties of Florists' Flowers. Of your species of *Geraniums*, 7 is *G. lateripes*; 8. *Calceolaria rugosa*, and 9. *Calceolaria refulgens*.

BRAMAH POUTRA FOWLS.—Mr. Nolan says, "Had you applied to any of the royal household, you could have been informed that the royal table has been furnished with Bramah Poutra Eggs since December last, and that their size, and that of their eggs, is as near as possible that of an ordinary turkey. I know it by experience. In this particular they are a decided improvement on the Cochins." It may be so; but we again say, let us have the experience of another season or two.

GLADIOLI (*W. J. F.*).—The *Colvili* is now only a third-rate sort. *Insignis* is very good, but, as you have only got the two, you had better buy *Gandavensis* (*floribundus* of the shops), *Psittacinus*, *Victoria*, and *Rex rubrorum*, finer ones being still scarce and dear. Their treatment now we cannot tell you, as we do not know how they have been treated hitherto. If you have them in pots, plunge the pots in the open ground, and keep them moist till the leaves turn yellow; then take them up, dry them, and house them just as you would so many potatoes, and, like potatoes, you can plant them again in November or February, whichever suits you best. The *Cortusa Matthioli* is a dwarf, hardy, late-spring-flowering herbaceous plant, as old as Ireland itself, and as good, with a little protection in hard times, and a little coaxing at all times.

LAUREL HEDGE (*A Half-pay Officer*).—No matter how high your Laurel hedge is, you may cut it down to the height of six feet, or three feet, or to the surface of the ground, with little or no harm to the roots; and you can keep it in future to any height you choose by summer cutting only. To make a heavy onslaught on Laurels, however, the end of April is the best time; the end of July the next best time, provided that all the very soft growth of the autumn is cut well back before the frost sets in. We would not ourselves, for one moment, hesitate to cut down a twenty feet high hedge of the kind any day from the end of March to the end of July, and we would cut one foot lower than the desired height of the future hedge, and allow that foot to be made up of stumps, the remains of close prunings, three or four times each summer for a long time.

FANCY AND TOM THUMB GERANIUMS (*An Amateur*).—When the Fancies cease blooming let them get a little dry, then cut them down, and proceed as with greenhouse Geraniums. *Tom Thumb*, unless under very bad management indeed, would not cease blooming till the end of October; but if he does, you must still suppose that he is in full bloom, and treat him accordingly, till the frost comes, then reduce him to suit your winter room. We can say nothing about the other part of your letter. The man is in the hands of the lawyers; hundreds of that class are always on the verge of bankruptcy; and it is a great temptation to them when they receive money before the goods are delivered.

CHICKENS DEAD IN THE SHELL (*W.*).—This has been frequently complained of this season; and the disappointment is not confined to any one particular breed. In general we have found it arise from the nest not being warmly constructed.

MOLES (*G. T. S.*).—We are quite certain that Moles are of more benefit to the cultivator by destroying Wireworms and other underground vermin than they are injurious by disturbing the roots of the crops. The chief objection to them is the litter and ill-appearance made by their mounds.

CHERRIES IN BRANDY (*R. H. J.*).—The best preparation of these we ever met with was made by putting Morello Cherries into a jar, and filling it with boiling water; when cold, draining and drying them; and putting them into brandy, in each pint of which had been dissolved three-quarters of a pound of sugar. A little Cinnamon, and a few Cloves, had been put in before hanging down the glass jar, and they were kept in a cool dry place.

RICE AND DATE-STONES (*A Warm Subject*).—Rice having been deprived of its outer skin will not grow; Date-stones might be induced to do so; but both Rice and Dates would require a very warm stove, and the plants would not be worth the trouble bestowed upon them.

MOSES (*Enquirer*).—We find that Mr. Frederick Y. Brocas, 4, Cumberland Place, Kew, is now prepared to send out his second set of British Mosses, and to receive fresh orders for collections of Flowering Plants, Ferns, and Mosses. Early applications, with full particulars as to what is required, and the mode of sending the same, is desirable.

CALENDAR FOR AUGUST.

FLOWER GARDEN.

ANEMONES (common) sow. **ANNUALS**, stick; water; clear from decayed leaves, &c. **AURICULAS**, shift into fresh earth; water; seedlings prick out; sow. **BEDS**, in which bulbous flowers have grown, fill with annuals from pots, to flower through autumn. **BIENNIAL** seedlings, transplant. **BULBOUS**-rooted flower-seeds, as *bulbous Iris*, &c., to obtain varieties, sow. **BULBOUS** roots remove or transplant; remove and plant offsets; plant. **CARNATION** layers cut from old root and plant; water frequently; layering may still be done, b.; card the flowers, and shade from sun, e. **DAHLIAS**, stake; thin the flowers. **DAISIES** propagate. Put in **CUTTINGS** of all flower-garden *Geraniums* early. **DOUBLE**-blossomed perennials with fibrous roots, as fine double *Larkspurs*, &c., propagate by division, e. **DRESS** borders as required. **ENGINGS** of box, &c., clip in wet weather. **EVERGREENS** may be moved, e. if wet weather; plant cuttings. **GRASS**, mow and roll weekly. **GRASS SEEDS** may be sown, e. **GRAVEL**, weed and roll weekly. **HEDGES**, clip in moist weather, except laurel and holly hedges. **HELIOTROPES**, put in cuttings under glass in a gentle heat b. **MIGNONETTE** sow in frame, b. **PELARGONIUMS** propagate by cuttings, b. **PERENNIALS**, in pots and elsewhere, will require water almost daily; cut down flower-stalks as they finish blooming; seedlings transplant. **PIPINGS** of Pinks may be planted out. **POLYANTHUSES**, sow. **PONDS** keep clear of green scum. **POTTED ANNUALS** will require water daily in dry weather. **RANUNCULUSES**, sow; plant in pots to bloom in November. **ROSES**, bud; prune in strong straggling shoots; cuttings of China and Tea-scented varieties plant under hand-glasses. **ROSES** may be budded to the end of September on the Manetti and some Bourbon stocks. September is the best time to bud, unless done at the end of May. **SEEDS**, gather as they ripen. Even those of *Heliotropes* and *Verbenas* will frequently be found to be fertile. **SIRUBBERY**, cut off the bunches of seeds of Laburnums and Lilacs, &c., to strengthen in the bloom next year; also cut off the seeds of *Rhododendrons*. **SOWINGS**, to obtain varieties, had better be done in boxes. **TEN-WEEK STOCK**, sow, b. **TULIPS**, and other bulbous-rooted flower-seeds, sow. **TURF** may be laid, e. **VERBENAS**, put in cuttings of new kinds, e. **WATERING** will be required generally in dry weather. **WEEDING**, generally attend to. **Cuttings** of *Penstemons*, *Snagdragons*, double *Lychnis*, and other herbaceous plants, will yet succeed, if planted and shaded under hand-glasses. Of the *China Asters*, mark the finest, and save for seed.

D. BEATON.

FLORISTS' FLOWERS.

AURICULAS and **POLYANTHUSES**, finish potting, b. **CINERARIAS**, take off slips, transplant seedlings, sow, b., for the last time this year. **CARNATIONS** and **PICOTEES**, finish layering, m.; seedlings transplant. **CHRYSANTHEMUMS**, layer those planted out for that purpose; pot off cuttings; give the last potting to all intended for blooming; water most abundantly, and syringe daily. **DAHLIAS**, stake, tie, mulch and water in dry weather; cuttings of new ones may yet be struck. **FUCHSIAS** done blooming place out-of-doors; save seed. **HOLLYHOCKS**, keep well tied to the stakes; cuttings of, put in heat under a frame, shade from sun till rooted. **PANSIES**, save seed of, put in cuttings, b., for the last time this year; transplant seedlings. **PINKS**, cut down old flower-stems; save seed of; transplant pipings already rooted, and also seedlings. **PELARGONIUMS**, cut down; give no water till they break again; put in cuttings; transplant seedlings; pot off cuttings already rooted. **PETUNIAS**, save seed from; transplant seedlings of; put in cuttings. **RANUNCULUSES**, take up and store without fail, b., or they will begin to grow again. **ROSES** bud b.; put in cuttings of; save seed. **TULIPS**, if not all taken up, should be at once. **VERBENAS**, peg down; water freely in dry weather; put in cuttings of good kinds only; save seed. See that all plants in pots are duly supplied with water, and keep a constant look out for all kinds of vermin.

T. APPELBY.

GREENHOUSE.

AIR, give plenty night and day, especially during the former. In very hot weather, it is often advisable to keep rather close with a moist atmosphere during the day, even though the sashes should be entirely removed in the evening, to be replaced in the morning. This treatment will apply to *Heaths*, *Azaleas*, *Camellias*, &c., that are now making their growth. Those which have set their buds may be removed to a sheltered place, and have no glass protection for a time. **BUDDING**, of all things, finish

before the wood gets hard. It may yet be done with *Oranges*, *Camellias*, &c. **CINERARIAS**, propagate by rooted slips, and transfer the earliest to blooming pots. **PELARGONIUMS**: those done flowering cut down, and now pushing again may have the soil shaken from them, be placed in light soil, and in a close moist pit, to encourage free growth. Until that growth has taken place, however, give little water at the roots. In growing from cuttings, success will greatly depend in never allowing them to stand still, but keeping them constantly, but slowly, growing. Cut down successional plants as they get out of bloom. The fancy kinds, if the points and old flowers are merely removed, will flower again before winter. **GREENHOUSE PLANTS IN GENERAL**, if healthy, and their wood made, will be better out-of-doors in a sheltered place than within; defending the pots from being too much beaten in sunshine is even of more importance than shading the tops. **ALL YOUNG STOCK** growing freely begin to harden by exposure by the end of the month. **POTTING**: finish shifting as soon as possible, that the plants may be feeling the outside of the pots before winter. **CHRYSANTHEMUMS**, **SALVIAS**, &c., for winter blooming, set in an open place fully exposed to sun and air. The former must not be stopped any more. The latter should alone receive final stopping and shifting. **PROPAGATION**: almost everything may now be successfully propagated. The whole of the **SUCCULENT GERANIUM FAMILY** will do best on a south border. **CLIMBERS**, on the rafters, train when over rampant, but the more natural looking the better. By and by they must be cut in to allow more light to the plants. **GATHER SEEDS** of all desirable things as they ripen. The propagating of half-hardy things, such as **CALCEOLARIAS**, may commence about the end of the month. About the middle of the month, sow seed of **HERBACEOUS KINDS** in a cool pit. **WATERING** will not be wanted quite so much, unless the days are very bright. In such days use the syringe among growing plants freely in the afternoon. **DRESS**, tie, surface earth, and keep all neat and clean. R. FISH.

FRUIT-FORCING DEPARTMENT.

As long as the temperature will permit, admit **AIR** day and night. Allow the **TEMPERATURE** to range, with sun-heat, from 65° to 85°, and during night from 55° to 65°. **FIGS**, water liberally. Give the last shifting, early in the month, to those **PINES** intended for early fruiting next season; let others follow in succession; keep down superfluous suckers; use abundance of atmospheric moisture. Clear ripe **GRAPES** from all diseased and mouldy berries; admit abundance of air. Keep down, or, rather, keep away, the **REN SPIDER**, by lighting a fire on dull days, and brushing the pipes or flues with a thin mixture of sulphur and water. Thin freely the late crops, and water the **VINES** in dry weather with liquid manure, also use mulchings. Give **PEACH-HOUSES**, from which the fruit has been gathered, copious syringings; and get the wood hardened and ripened before removing the sashes. Regulate and stop the shoots, and set the fruit on **MELON** plants; use manure-water liberally. Strike cuttings, or sow seeds, of **CUCUMBERS** intended for a late supply. Encourage the completion of growth of all **PLANTS IN POTS** intended for forcing, and place those fully matured at the back of a north wall. Lay **STRAWBERRIES** in small pots, to be shifted into larger. Turn **BARK BENS**. **PAINT**, wash. Clear out furnaces, empty and rinse out boilers, and have everything in readiness for a cold weather campaign. R. ERRINGTON.

ORCHARD.

BUDDING, finish, and remove bandages from that done three weeks since. Remove waste shoots from stocks, especially below the bud. **BLIGHT** (American), apply the brush once more, using spirits of turpentine. **APHIDES**, still try to extirpate them in peaches, plums, &c. **RED SPIDER**; if this appears, dust flowers of sulphur on the back of the leaves. **CHEEKIES**, net carefully. **COCCUS**, or scaly insect; if this appears, use soap-suds. **FIGS**, continue to disbud, and commence stopping rambling shoots. **VINES**, follow up stopping of laterals, and keep them thin; also thin the berries. **APRICOTS**, stop gross leaders, and keep down breast shoots by pinching. **PEACHES** and **NECTARINES**, stop all gross shoots, and keep under breast wood by the same process; where too thick, remove shoots altogether. **PEARS**, remove foreright spray, thinning or stopping the wood freely, first selecting and tying down all short-jointed and brown-looking wood. **PROTECT** fruit with nets &c. **WASPS**, destroy nests. Late **STRAWBERRIES**, water well. **ALPINES**, reduce runners from, and place slates or tiles beneath. **STRAWBERRIES**, make plantations of early and strong runners. **RASPBERRIES** (double-bearing), remove all barren shoots from, and carefully train those in blossom. **TOMATOES**, thin, stop, and train. Commence and complete, as soon as possible, all **NAILING** and **TRAINING**, whether on walls, pales, or espalier trellises. **GOOSEBERRIES**, still continue the extirpation of caterpillars. **BUSH FRUIT**, retard by shading with mats. **GRAFTS**, remove stock shoots from, and protect from wind waving. R. ERRINGTON.

ORCHID HOUSE.

AIR, give plentifully on all fine days, to consolidate the now fast-forming new pseudo-bulbs. **BASKETS**, dip every week in tepid water. **BLOCKS**, syringe twice a day. **BARKERIAS** now growing, keep very moist till the annual growth is made; allow the air to play freely upon them, this will strengthen the plants much. **DENDROBIUMS**: many will have made their new pseudo-bulbs, cease giving much water to these, and remove them into a cooler house. **EPIDENDRUMS** in the same condition, give a similar treatment to. **GRAMMATOPHYLLUM**, a noble orchid, continue growing on yet. **HUNTLEYAS**, having no pseudo-bulbs, continue to keep moderately moist and cool. **INSECTS**, diligently keep under, or they will be a pest all the year, and be difficult to eradicate in winter. **LÆLIAS** will now be growing freely, be liberal, and use the syringe frequently; if on blocks, add a thin layer of moss to give and retain

moisture about the roots. **MOISTURE TO THE INTERNAL AIR**, continue to supply daily, especially in the growing department. **PERISTERIA ELATA**, and all similar terrestrial species, keep moist as long as the bulbs continue to swell, but not a moment longer. **PLANTS IN BASKETS**, remove into a cooler house when in bloom, or as soon as the new growth is perfected. All plants that have made their pseudo-bulbs quite up should have the benefit of a lower and drier atmosphere. This point must be strictly attended to, because if they are kept moist they will start to growth the second time, which will weaken stronger growth and materially injure the blooms. The success of next year's bloom depends much upon the strength of the preceding year's growth, together with a judicious period of rest, induced by a cool and dry treatment. T. APPLEBY.

PLANT STOVE.


ACHIMENES done flowering, set out-of-doors, laying the pots on one side, to keep the bulbs at rest, and free from wet. **AIR**, give liberally through the whole month, unless cold wet days intervene toward the end. **CUTTINGS**, pot off as soon as struck, because the time is short for them to acquire strength to carry them through the winter. **GLOXINIAS** and **GESNERAS**, as they cease blooming, treat the same as *Achimenes*. **HEAT**, keep under as much as possible, but have the flues and pipes in good order for working, as cold nights might come towards the latter end. **INSECTS**, destroy as much as possible, or they will rapidly increase. **IXORAS**, specimens of, top-dress and tie out, so as to form handsome bushes of a rather pyramidal form. Young plants give a shift to, b.; stop and tie out; moisture, supply plentifully both to the roots of the plants, and to the internal air. **PASSION-FLOWERS**, and other climbers, trim in freely, and tie them so as to allow plenty of light to descend amongst the plants. **PLANTS IN FRAMES**, top dress and repot if needful; give plenty of air to, and water only in the mornings. **SPONGE**, use freely to clear the leaves from dust and insects; this is preferable to so much syringing. **WATER** more moderately as the days shorten. **WEEDS** and decaying leaves remove daily. T. APPLEBY.

KITCHEN-GARDEN.

Particular attention should be paid to **SOWING** from the 1st up to the 12th of this month, as so many of our best vegetables and flowers are produced for the next season from the sowing made at the above-mentioned time; the *Cauliflower* only should be deferred until about the 21st of the month. **ALEXANDERS** and **ANGELICA**, sow, and attend to earthing-up that in growth. **ARTICHOKES**, cut away the heads of, whether required for use or not, for if allowed to run to flower they will very much exhaust the roots. **ASPARAGUS**, attend to; keep clear from weeds; should any branches be falling about over pathways let them be tied up to sticks rather than cut away. **BASIL**, attend to; cut and dry off steadily when in bloom. **BORAGE**, sow, and thin out growing crops, or earth-stir and look after seeds. **BORECOLES**, **BROCOLIS**, and **BRUSSELS SPROUTS**, plant out as early as possible; do not spare manure among any of the cabbage tribe. **CABBAGES**, sow of any favourite kinds; also a little *Red Dutch* for pickling; and prick out for planting out next month. **CARROTS** (Early Horn), sow on dry warm borders for early spring use: keep the growing crops clear from weeds. **CAPISICUMS** encourage the growth of by earth-stirring. **CAULIFLOWERS**, sow out in open quarters, so as to have a stock of healthy sturdy plants about the 21st to the 24th, to stand the winter; also plant, and water well. **CELERY**, plant out in earnest, and attend to earthing-up advancing crops in dry weather. **CRESS** (American), sow. **CUCUMBERS**, attend to thinning, topping, and clearing away all decayed leaves, either in pits, frames, or out-door crops; cuttings may be struck of any favourite kinds for autumn and winter growth. **ENDIVE**, sow, plant, or prick in succession, and tie up, or cover up, full grown for blanching. **HERBS** of all kinds, cut and dry when in flower. **HOING**, attend to at all favourable opportunities. **LEeks**, plant out. **LETTUCES**, sow *Brown Cos* and *Hardy Hammer-smith*, the two best kinds for general culture. **MELONS**, give plenty of air to; be sparing of the water among those ripening off their fruit; encourage the growth of the younger crops just swelling off their fruit with about three liberal waterings of liquid manure-water; let it be given steadily from the spout of the water-pot, and principally at the back part of the beds, and not over the crowns of the plants; and sprinkle almost daily in hot, dry weather, at shutting-up time. **ONIONS**, sow of the silver-skinned kind, being most hardy, to stand the winter; keep the advancing crops clear from weeds, and press down stiff-necked towards the end of the month, as cases may require. **PARSLEY**, cut down or transplant, or sow, and collect seed. **POTATOES**, if early and ripe, may be taken up and stored away in a cool situation, for present use, in particular where the ground is wanted for some other immediate crop. **RADISHES**, sow, if required. **SAVOYS**, plant out as early as possible. **SEEDS** of all kinds, collect as fast as they ripen, or the birds will make sad havoc among them. **SORRELS**, keep flower-stems cut away. **SPINACH**, sow, of the prickly seeded kind, in well prepared borders; and sow in drills ten inches apart. **SWEET MARJORAM**, see *Basil*. **TURNIPS**, sow, of the little early kinds, any time during the month, and attend to thinning and hoeing advancing crops. Should the weather be very hot and dry, *Water* thoroughly previously to sowing the various seeds, and if a little shading could be given from ten to three in the afternoon, until the plants are up, all the better. T. WEAVER.

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WEEKLY CALENDAR.

M D	W D	AUGUST 4—10, 1853.	WEATHER NEAR LONDON IN 1852.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
4	Th	Clifden Blue ; chalky places.	29.419 — 29.338	72—46	S.W.	01	30 a. 4	42 a. 7	3 21	23	5 47	216	
5	F	Common Copper ; com.	29.458 — 29.439	74—47	S.	04	31	40	sets.		5 42	217	
6	S	PRINCE ALFRED B. 1844.	29.398 — 29.353	68—54	S.	42	33	33	8 a 48	1	5 35	218	
7	SUN	11 SUNDAY AFTER TRINITY.	29.336 — 29.298	74—52	S.	12	35	37	9 8	2	5 29	219	
8	M	Coxcomb Prominent ; oaks.	29.477 — 29.396	72—51	W.	02	36	35	9 26	3	5 21	220	
9	Tu	Lesser Yellow Underwing.	29.523 — 29.499	71—47	S.W.	06	38	33	9 42	4	5 13	221	
10	W	Brown Tail ; hedges.	29.631 — 29.583	71—49	S.W.	08	39	31	9 59	5	5 5	222	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 74.7° and 52° respectively. The greatest 93°, occurred on the 10th in 1842 ; and the lowest cold, 36°, on the 4th in 1847. During the period 110 days were fine, and on 72 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 253.)

NATURAL ORDER. CROSSWORTS OR CRUCIFERS (CRUCIFERE).

CHARACTERS.—Sepals four, deciduous, cross-form. Petals four, cross-form, alternate with the sepals. Stamens six, of which two are shorter, solitary, and opposite the lateral sepals, occasionally toothed ; and four longer, in pairs, opposite the anterior and posterior sepals ; generally distinct, sometimes joined at the base, or furnished with a tooth on the inside. Disk with various green glands between the petals and the stamens and ovary. Ovary above the petals one-celled, with placenta attached to its side, often meeting in the middle, and forming a spurious division. Stigmas two, opposite the placenta. Fruit a long-pod, one-celled, or spuriously two-celled ; one, or many-seeded ; opening either by two valves separating from the septum ; or not opening naturally. Seeds attached in a single row by a small stalk to each side of the placenta, generally pendulous. Albumen none. Embryo with the radicle folded upon the cotyledons.

MATTHIOLA : The Stock.

GENERIC CHARACTER.—Calyx converging, a little compressed ; leaves line-like, narrow, oblong, concave, erect, deciduous, two opposite ones protuberant at the base. Petals reversed-egg-shaped, spreading, entire, or with a broad shallow notch ; claws erect, the length of the calyx. Stamens with awl-shaped, simple, distinct filaments ; two outermost much the shortest, embraced at the bottom by a nectariferous gland. Anthers oblong-arrow-shaped, nearly erect, of two line-like lobes. Germen oblong, rather compressed, shorter than the stamens. Style short and thick, or more frequently wanting. Stigma of two converging lobes, either thickened or protuberant at the back, permanent. Pod straight, narrow, oblong, compressed, or nearly cylindrical, convex or keeled at one or both sides ; valves straight ; partition membranous. Seeds ranging alternately in a single row, orbicular, compressed, generally encompassed by a membranous border ; cotyledons flat, lying upon the part of the pod.

MATTHIOLA INCANA : Hoary Shrubby Stock.

Description.—It is a biennial, as cultivated in our gardens, but there is reason to believe that in a state of nature it is a perennial. Root much branched downwards ; simple at the crown. Stem erect, bushy, round, leafy, hoary, about two feet high. Leaves scattered, two inches or more in length, covered on both sides with dense, starry, hoary down, single-ribbed, entire, thick and leathery ; rounded at the extremity ; each tapering at the base into a short foot-stalk. Flowers in terminal bunches, large, fragrant, often double. Petals rounded, nearly entire, light purple, their claws pale and greenish. Pod two or two-and-a-half inches long, crowned with the stalkless stigma subtended at each side by a small point ; the valves frequently dissimilar, one being more keeled than the other. Seeds numerous, most convex at one side, light brown, surrounded entirely by a white filmy border ; cotyledons accumbent, as may be seen without taking off the skin.

Places where found.—On rocky ledges of the cliffs in the south of England.

Time of flowering.—June and July.

History.—The first notice we have of this and the next species we shall describe, is in Lyte's edition of "Dodoen's Herbal." It is there said, "Some of the late writers do call them *Viola matronales*, that is to say, *Dames Violets*, but

this name doth rather belong to another sort of Violets. If we ought to call these Violets by the aforesaid name, the name will best agree with the *small Castle Gillofer*. The greater sort is called in English, *Garnesie Violets*, *White Gillofer* (from the hoariness of the leaves), *Stock Gillofer*, and *Castle Gillofer*. The smaller kind may be so called also."



This "smaller kind" is that above described, and is the "Violet-coloured Stock Gillofloure" of Gerard. In his time only single-flowered kinds were known, but in the second edition of his "Herbal," in 1636, by Johnson, the latter mentions the double varieties, adding, "of which there are many and pretty kept in the garden of my kind friend, Mr. Ralph Tugge, at Westminster."

This is, in fact, the flower known in our gardens as the *Queen's Stock*, of which the *Brompton Stock*, *White Stock*, and *White Wall-flower*, are merely varieties. The old name *Gilliflower* is a corruption of its French name *Giroflier*. Turner calls them *Gelyflower*, or *Gelover*, adding, that "the garden Gelovers are made so pleasant and sweet with the labours and wit of man, and not by nature." Eventually these names were corrupted into *July-flower*.

MATTHIOLA SINUATA: Great Sea Stock; Prickly-podded Gilliflower.

Description.—It is a biennial. *Root* long and tapering. Whole *herb* clothed with densely intricate starry down, intermixed with short glandular rigid prickles, which abound most on the *Pods*. *Stem* branched, widely spreading, two feet high, round, leafy. Lower *leaves* broad, spear-shaped, alternately toothed, blunt; upper spear-shaped, undivided and entire. *Flowers* the size of the foregoing, but *petals* of a more dingy flesh-coloured hue; not fragrant by day, but in the evening very highly scented, with a kind of aromatic pun-

gency, rendering this species well worthy of a place in gardens. *Stigma* stalkless, bluntly protuberant at each side. *Pods* three or four inches long, convex at each side, all over hoary and glandular. *Seeds* with a membranous border. The taste of the whole herb is alkaline and bitterish.

Places where found.—Sandy sea coast of Wales and Cornwall.

Time of flowering.—August.

History.—We have nothing to add to what has been stated relative to the preceding species. (*Smith. Lindley. Martyn. Withering. Dodocens. Gerard.*)

WE fear that the *Potato Murrain* was promoted to a very great extent by the rains and cold weather which prevailed in July. It is worthy of remark, however, that although the haulm was the first to show "the black spot" where growing on the chalk hills of Hampshire and elsewhere, yet, on these well-drained situations the tubers have remained almost free from disease. In the valleys around them the haulm remained the longest green, and apparently unaffected, but the tubers are very extensively destroyed.

We hear also from Cheshire, that, "owing to the wet and cold weather, the disease is spreading unmistakably among the tubers."

Another correspondent (*P.*), writing from Meath, in Ireland, on the 21st of July, says—"I observe to-day the Potato disease has unmistakably commenced in a small plot of early Potatoes (*Cockneys*); both the stalks and tubers are affected. All other sorts are as yet untouched in the garden and adjoining paddock. There is invariably, on the underside of every diseased leaf, a very small, yellowish insect, which hops like a Turnip-fly if disturbed; it is not to be seen on any of the healthy Potatoes, although they are covered with aphides which do not hop."

COVENT GARDEN.

THE supply of summer fruits continues unabated, particularly as regards Cherries. Strawberries are less plentiful. Of *CHERRIES*, the sorts which are now in are the *Kentish*, *Bigarreaus*, and *Black Caroon*. The latter is a very old variety, extensively cultivated in Buckinghamshire and Herts, and is also known in other parts of the country under the name of "*Merries*," which is a corruption of the French word *Merisiers*. As an orchard variety it is very profitable, as it generally produces most abundant crops, and, from its fine uniform black colour, is attractive at the markets. It is not, however, a variety worth cultivating in a garden collection. The prices which these make are from 2d. to 4d. per pound. *APRICOTS* from France are also plentiful, and realise from 1s. 6d. to 2s. per dozen. *PEACHES* and *NECTARINES* are very large, well-coloured, and of excellent quality; they still maintain the prices we formerly quoted of 2s. each.*

During the last fortnight there have been large importations of West India *PINE APPLES*, of very excellent quality and good size; and, were it not for the pro-

fusion of scale with which the crowns are encrusted, they might pass very well for home-grown fruit. Ripe *GOOSEBERRIES* are now very common, and make 4d. per quart. A few of the *Margaret Apple*, or, as it is sometimes called, *Striped Joanneting*, have made their appearance. Except the old *Joanneting*, this is the earliest eating Apple we have, but being so much more coloured, and, consequently, more attractive to the popular eye, it is better adapted for markets than the old white variety; it is also a better bearer. New *POTATOES* continue to come in good condition, and make from 2s. to 3s. per sieve. *GREEN WALNUTS*, for pickling, have been offered very generally, during the past week, at 1s. 6d. per 100.

The *VEGETABLES* are very plentiful, and of good quality. They make very much the same prices as we have quoted in former reports.

FLOWERS of all kinds are in abundance; but the bouquets are of a very ordinary description, both as regards the flowers employed and the mode in which they are made up, compared to what they are during the winter months. H.

PERPETUAL ROSES.

(Continued from page 379.)

My former remarks were confined to root-culture; I now wish to offer a little advice to the uninformed about the *branches, foliage, &c.*

In the first place, let me pointedly observe, that as with fruit-trees, so with *Roses*, those who wish to excel in their culture must not long permit the ravages of *insects*.

The winter or spring *pruning* of *Roses* is so well understood, and so much has been said about it, that I may pass it lightly by. As a general maxim, it may be observed, that very coarse-growing kinds require to be moderated in their habits, by pruning away the grosser shoots; whereas, in shy and delicate kinds the practice should be reversed. Thinning-out is a most important operation; unless this is duly performed, three-fourths of the powers of the tree will be wasted in the production of crippled blossoms or abortive buds; or, if perfect, they will be so crowded in the interior of the tree as to produce a confused and neglected appearance. I fear that many, from whom better things might be expected, neglect a proper degree of thinning. Thus, such *Roses* as *Beauty of Billard*, which produces an amazing quantity of weak shoots, is sometimes seen in a smothered condition; the interior full of *Roses*, which, however they convey the idea of exuberance of growth, only serve to starve each other, and to break up the flowering period prematurely. Then, in such as *Coupe d'Hebe*, *Brennus*, or *General Jacquemenot*, the latter a

* By mistake, we said 1s. 6d. to 2s. per dozen.

Rose which ought to be better known, how different the habit to such as "Billard!" In their growth, we have, perhaps, about a score or so of monstrous shoots to deal with, many of which look as likely to produce watery wood (if the culture has been high) as blossoms. Here we may reserve wood of a medium character.

Another point may first be adverted to in Rose pruning; whenever the older wood assumes a sort of dirty yellow colour, with, here and there, livid-looking blotches, it may be taken as a symptom of "notice to quit," and be removed in due time. The fact is, the Rose is obviously made by our gracious Creator to adapt itself to the various desires of our species. Here, we may see a tree monster, thirty feet in height; there, a pigmy China, or Fairy Rose, decorating the very edge of a mimic bed or border, or the window-sill of the humble cottager, together with all the intermediate grades of shrub, climber, or the ordinary standard. Now, had the Rose been a decided timber-tree, it could not have possessed this amazing adaptability, neither if it had been merely a little bush.

Now to my chief purpose in offering these remarks—the *summer management*. Many persons are absent from their homes from early spring until past Midsummer; that is, during what is called the "London season," for this regulates the movements of thousands of persons in tolerable easy circumstances, and the rising of Parliament is the usual signal for such retreating to their country homesteads for a while. With them, it becomes a desirable point so to retard their Roses as to ensure a full and strong bloom in July and August; as to the rest of the autumn, we are constrained to fall back on special classes or kinds to carry out the object well.

To allow Roses to exhaust their strength, under such circumstances, is bad policy; and before proceeding to consider summer dressing, I may first state what practice I consider it best to pursue. I hold it wrong to prune under such a case, as in ordinary practice, which is to cut back, *at once*, to the length considered most proper. Both the *period* of pruning, and the *mode*, may differ much with advantage. I have been in the habit of thus retarding Roses for years, and have had a fair share of success. I will, therefore, simply detail my practice.

At the end of autumn, say in the middle of November, I run the shears over them, merely dubbing off as much as will prevent the possibility of wind waving, and promote a tidy appearance during winter. Now, according to a law which influences the development of buds, retarded Roses, as far as my observation carries me, show an increasing disposition to sprout later annually, even as we see in our fruit trees.

Our retarded Roses, in the main, show but little disposition to grow until the early part of April, and about that period I give a first pruning, which consists in thinning out every twig not wanted. The remainder of the head is then shortened, merely cutting away those points which have begun to sprout. They now appear almost stationary for two or three weeks, and at the end of the month, or beginning of May, the final pruning is given. This consists in cutting back to where the young wood is required from, and in this act growing points are again pruned away. By these proceedings, I consider a whole month is gained in point of retardation, and this is a most material affair, where such objects require to be carried out. It may be urged that this must weaken the plant; it may be so, but this part of the argument is trivial, for on Moss Roses I have practised it for many years, and the bushes thus operated on are now in the greatest of beauty, and will be so until near September; and, indeed, of all the other classes the same may be said in the main. Thus, it is nearly the beginning of June before the trees are filled with young shoots, and now a little dis-

budding becomes requisite. Many small shoots may be found springing from the interior of some kinds, and which, if suffered to remain, only tend to confusion; where the tree is otherwise well supplied these are removed. And next, in some kinds, very gross shoots may be found which may prove only wood shoots; such, if they can be spared, are totally removed also, but if needed to sustain or complete the form of the tree, they are simply pinched to about three eyes.

Immediately on the heels of this the trees are thoroughly cleaned by tobacco-water, applied in the customary way, two days in succession.

Just before blooming commences, very coarse shoots may be seen in some kinds overtopping the rest, and mostly barren. I hold it a necessary procedure to cut or pinch these back to a few eyes, for they not only operate against a due equalisation of the sap, but they give the trees a coarse appearance, and are averse to symmetry of form, which, as far as outline is concerned, is, I think, of much importance.

Liquid manure is of great assistance, if given judiciously; but I would not advise its application long before blooming time, unless the plants are weakly, for it is apt to make robust kinds coarse, and, indeed, to force them to a size which they cannot well maintain afterwards. The strongest, however, will be benefited with it when once they begin to flower freely. I use a liquid mixture of soot and guano clarified with lime; and for the information of those who wish to try its effect, I may observe, that two ounces of best Peruvian guano will be sufficient for a gallon of water, adding about half-a-pint of soot. We mix large quantities at once, the soot-water in a vessel by itself, for it is best to skim it clear before mixing with the guano-water.

In *watering*, care should be taken not to puddle or derange the surface of the soil; and large quantities should be given at once, enough to thoroughly soak the soil; we generally give two large pots full to a tree, perhaps about six gallons. Without a liberal supply of moisture, indeed, good Roses cannot be grown; they will speedily cease blooming, and suffer from the spot in the leaf.

One thing is most desirable in tree Roses, and that is a good stout stem, one almost capable of supporting its own head. This is not merely for the sake of giving consistency to the whole, neither for appearance alone, but the fate of the tree hangs in some degree, it would appear, on this point. Nobody can deny that a stem with capacious sap vessels is in a condition to supply the head with the necessary juices better than one of a lean, contracted, or stunted character. How, then, are these capacious sap vessels to be obtained? Certainly, we may meet with Dog Rose stems so stout, naturally, as to leave little to be desired; but these are the exceptions. I am of opinion, that the ordinary course of management as to pruning, whilst in the nursery, is wrong. I cannot say what may now be the practice with our nurserymen as to the rearing standard fruit-trees for the orchard, but in my younger days a very different practice from that applied to Roses prevailed.

Having been originally trained to the nursery and seed business, in the neighbourhood of London, and having divided some seven years between the counter and the grounds, I am, of course, quite familiar with the practice of those times. For instance, in rearing standard Apple-trees, with stems of about six feet, the shoot from the graft was "headed" at that height. During the next summer, a great number of side-shoots were produced from the head, nearly unto the ground, and, of course, the prime object would now be to form a head as speedily as possible.

Most persons unpossessed of a practical knowledge, would at once remove every side-shoot, except those really required to form the head; but not so the knife-

man of those days. These were suffered to grow freely the whole summer, and at the next winter's pruning were, according to nursery technicality, "spurred-in," that is to say, they were all, except the head, pruned back to a single eye or so; the head formed out into about four shoots, as nearly as possible at right angles, these shoots being shortened to some four or five eyes. I well remember having a debate with our ground-foreman about the propriety of the practice. In my youthful conceit, I could not get rid of the idea that it would strengthen the tree to prune all side-shoots away. I was, however, met with the answer, that they were left one year longer to strengthen and give consistence to the stem; of which fact now I cannot possibly hold a doubt. Now, why not apply this doctrine to the tree Rose? I have seen it sometimes practised, and am willing to promote it myself, but surely such does not generally obtain. And, if a promoter of strength in the main stem, is it not a promoter of durability of constitution also? I think it a safe and certain inference. My opinion is, that much of the shortness of life, complained of occasionally in the tree Rose, is chargeable here. No sooner is a stem produced than it is made a mere vehicle, before half solidified, for the transmission of juices between the root and branch; and I do think that our fear of this spurring system would invest this stem with very superior powers in regard of durability of constitution.

We sometimes meet with *miffy* Roses, and not in one or two sections alone; that is, Roses which cannot be induced to make wood freely, and which will, nevertheless, push wild shoots, in a free way, from the head, if suffered so to do. Doubtless, it is customary to prune these clear away; but I have found that, in many cases, it is good practice to suffer the wild shoots to grow unmolested until past Midsummer, when they may be pruned. These wild shoots possess much greater restoring powers than the lean and debilitated old head which it is sought to restore; and I have found this practice good enough to recommend in severe cases. It is almost unnecessary to advise that all suckers be constantly kept under. R. ERRINGTON.

BANK GROVE.

THIS mansion is near Kingston; and when I called here, last April, to see the extensive collection of Camellias in bloom, and more particularly the finest plant of them in the world, *Camellia reticulata*, I was so struck with the Rosary, that I asked permission to call again at the proper time to see the Roses in bloom, and to report on them and other things which I could not then compass. This was readily granted by the kind and liberal owner, W. Byam Martin, Esq. Bank Grove was celebrated for Roses in Sir John Broughton's time; and for specimen plants of them, it is, perhaps, now the first Rose-garden in England. I never saw such pillar Roses before, or in such profusion, or better bloomed. What would you say for a pillar Rose sixteen feet high, clothed down to the grass, where it is eight feet in diameter, as regular in outline as a pyramid, and flowering from top to bottom, as regularly as if the Roses were put on by hand; every leaf in a whole rosary as green and shining as could be, and not a fly or blight to be seen on a surface that would cover some acres, if that surface were reduced down and divided to the dimensions of plants in an ordinary rosary! *Coupe de Hebe*, perhaps the best of all Roses for a pillar, is here in abundance, at from eight to twelve feet high, and that is generally the common height of scores of pillar Roses, both in the regular rosary, which is in circular beds on the grass, and in avenues along some of the walks. In these avenues the pillar Roses stand

five feet from the walk, and twelve feet between pillar and pillar, and in each case the pillar looks as if the particular Rose was growing on its own roots; and there is another form of pillar Rose that I never saw before, and I believe was never yet mentioned in print; but now, after seeing how Roses have been managed here, it is difficult to believe that the Rose world, so to speak, has gone on so long without adopting the plan generally. I think the introduction of the strong-growing hybrid Chinas must have been the origin of this style. We all know how difficult it was, at first, to get these to bloom freely; if they were pruned, they flowered not; when left alone without pruning they went out of shape, or there was no known shape into which they could be trained so as to give the full complement of flowers. At last, the great rose-growers themselves suggested that they should not be pruned at all, farther than cutting-off mere points, and thinning-out old wood with the very strongest and the weakest shoots; and something to that effect is a standing annual paragraph in the Rose catalogues. Well, instead of this, these hybrid Chinas, and all the other very strong-growing Roses that were brought in on tall standards, have been given an original cast, and trained up as *standard pillars*, which is the right name for them. Now, a standard pillar Rose will not come in appropriately in every situation, nor, generally, in any situation, I believe, except one, and that one is often repeated in this garden, and the thing is managed so well, that I am almost sure it will come to be universally adopted in all good rosaries as soon as it is made known.

First of all, let us suppose a standard of the strongest of all hybrid Chinas, *Blairii*, No. 2. The stem is from four to five feet high; and what is to be done with it after two or three years? Nine people out of ten say it cannot be grown as a standard at all—it is too tender, and must have a wall; or it is too something else, or double that, and more to the bargain; but, somehow or other, it is in a bad plight in very many places, and a short liver in others. Here, however, it is the healthiest of Roses; does not require a wall or fence; and lives as long as any of them; it is also the highest pillar Rose in the garden, being just sixteen feet above the grass, and in magnificent bloom; and as a standard—that is a pillar standard—it is as manageable as a Spong's Rose. Now, if this *Blairii* can be grown thus as a standard, and so live as long as other Roses, and also look as healthy as it did in 1830, when it first came out, surely no one need fear trying any of the hybrid Chinas, or any other strong grower just in the same way, and that way is in the centre of a circle bed of Roses; ten feet ought to be about the diameter of the bed; the height of the stem, or Wild Rose, is, say five feet from this; a regular pyramid Rose may lawfully rise up to just twenty feet if one chooses; but any height will do.

Here, where the subject has been studied with great care, under all forms and governments for some years, they have come to a final settlement on the heights and diameters of pillar Roses; the height, they say, must be governed by individual taste, by the nature of the soil, and by the constitutional habit or strength of your Rose, and may be anything above eight feet; but there is a law to govern the diameter at the bottom, and that says, whatever the height of the Rose pillar may be, the diameter of it at the bottom should be as nearly as possible one-half the height; then, on that principle, a bed ten feet in diameter, as above, will carry a pillar Rose twenty feet high. The circular beds in this rosary that are devoted to this kind of pyramid are chiefly nine to ten feet in diameter, and planted thus—a tall standard in the centre, the head of it trimmed up as a pyramid, and the highest of this class is twelve feet high; then four or

five other standards of such Roses as are not so strong as the centre one, and only three feet high in the stem, are planted eighteen inches from the grass; their heads meet all round the bed, and form a *bottom diameter*, as it were, to the centre pillar elevated on the standard, so that the stem part of the centre Rose is not seen; after them, a good growing dwarf Rose is planted between each of the standards, and these must put their chief strength on the outside next the grass, the inside being so much in the shade of the standards, so that the bed is soon quite as full as if it had been planted, in the first instance, with a full-grown pyramid, ten feet in diameter; the bed, meanwhile, is the best disposition of Roses ever yet thought upon; indeed, it ought to be seen in full beauty of flower, as I saw a dozen of them July 7th, to be fully appreciated.

Mr. Page, the gardener, who manages these Roses, agrees with me, that that is the only way that their standard pyramids are suitable for; and also that without a standard pyramid in the centre, such beds can never be made to tell so effectively. Altogether, I was highly pleased with this part of their system of growing Roses. It struck me, that if three kinds of Roses were used for such a bed it would be still more telling on a stranger, as he might think, naturally enough, that but one Rose was used, that it was an immense pillar Rose, with the Rose blooms in three stages of bloom, or development; or the planting might be with a view to show how best to shade any three distinct varieties—say *Madame Laffay*, as a pyramid for the middle standard, then five standards of *Geant des Batailles*, and standard of *Marengo* for a dwarf on the outside; also, *Mrs. Elliot*, for the centre; *William Jesse* next; and *Comte de Montalivet* to the outside row; or any other three of the same class, and in one or three shades, just as fancy may direct. In some of the beds here there is the middle pyramid as above, then the row of standards, and the surface of the bed below with bedding plants, as *Calceolarias*, *Verbenas*, and the like, all very rich and very gay. Some of the strong growing Roses are in pyramids, but are brought up nearly of the same diameter from the bottom; these might and ought to be called Rose-columns. Then there are Rose-tents, ending in domes at the top; a climber in the centre, like the handle of an umbrella; then six pyramids in a circle round that, and five, or six, or more feet from the centre, are carried up seven feet high, an iron ring, at that height, connecting them together; from this ring the top of the pillars are trained doom fashion, to join the centre climber. Here is a regular Rose tent for a tea-party; and when the tent is on the line of a walk, and you have to pass through it, the effect is very good. Some of the pyramids end in a single shoot, and that is thought by some to be the *ne plus ultra* of Rose-training; but the different forms of pillars, pyramids, or colours, give a great variety, and, I think, more richness to the scene.

Of the ordinary standard and dwarf Roses there are also as many forms and sizes as are to be seen elsewhere, but being in general use, they need no particular description. I noted the following as instances that may be followed, however, with great advantage:—The common, erinason, and other Moss Roses, on their own roots, in pillars eight, ten, and twelve feet high, clothed from the ground to the top; *Fulgens*, ditto, ten feet; *Coupe de Hebe*, eight, ten, and twelve feet, magnificent; *Paul Perras*, ten feet; *Las Casses*, ten feet; *Persian Yellow*, ten feet! *Blairii*, from twelve to sixteen feet; *Boule de Nantieu*, commonly a dwarf, and one of the darkest, seven, ten, and twelve feet high, and proportionally in diameter! *Great Western*, ten feet; *Duchess of Sutherland*, seven feet; *La Dauphin*, a fine, light, pillar Rose, ten feet; *Chenedole*, ten and twelve feet, magnificent; *Henry Barbet*, eight and

ten feet; *Paul Rieaut*, a splendid first-class dark Rose, seven feet already; and selections from all the classes running in the same style, the diameters being from three to eight feet. The *Malmaison* Rose, on its own roots, is five or six feet high, and from two feet to a yard through. *Auguste Mie*, a splendid light Rose, and a hybrid perpetual, is quite a novelty in that class. An old hybrid China, called *Parigot*, is fully as good as the *Standard of Marengo*. *Vesta*, a semidouble Rose, and the highest coloured one, I remember thirty years ago, and which I have not seen these twenty years, is very fine here; another called *Miralba* is nearly as black as jet. *Comte Bobrinsky* is a more fiery Rose than *Geant de Batailles*; it is what I call the double *Gloire de Rosamene*, and would make a splendid bed, edged with *Fabvier*, or perhaps better with *Mrs. Bosanquet*, but it should be on its own roots. This is a good time to put in cuttings of all such; little side-shoots taken off with a heel are almost sure to grow if put in at all workmanlike; and after what I have seen at Bank Grove, added to my old notions, I am quite satisfied that nine-tenths of our best Roses would grow better on their own roots than when worked.

All Roses require a rich soil, but two-thirds of them will grow and do well in soil that would starve our own Dog Rose, and I should not be sorry to see this hip Rose cast to the dogs altogether, and be done with it; besides, there are two or three like it growing in our hedge-rows, which few can distinguish except when in leaf, and not always then, and these are good for nothing. The soil about Kingston is a very light sandy loam, on gravel or sand, and not far from water, yet, with good rotten dung, it is surprising to see Roses bloom so well. I did not enquire at Bank Grove how the rose-beds are made, but I suspect they are filled with the same loam from Wimbledon which gives such a gloss to their Camellias, and such stiffness and bloom to their Geraniums.

In bedding-out plants they are as rich as any of our dual gardens. They have two of the finest *Tom Thumbs* in the world; they are now out in two boxes large enough for the largest American Aloe, and each of them will be from five to six feet in diameter before the end of the season; they were as much last year, and all from one root; and they have lots in vases coming up to that size as fast as they let them. A bed of *Serise Unique* was very rich, also the *Unique*, *Tom Thumb*, *Punch*, and *Compactum*, and a new *Compactum*, I never saw or heard of before, with dark scarlet flowers, which must get its way to all good gardens. *Flower of the Day*, *Mountain of Light*, and another very good variegated one, intermediate between the two, *Punch* or *Tom Thumb*, in a bed, with a circle of the *Flower of the Day*, does well. This variegated Geranium, being neither scarlet or pink, and the white of the leaf is so soft, that it will always tell better as an edging than as a whole bed by itself; at least I think so, for I have not yet seen a large bed of it, and one can hardly judge properly by a small or moderate example. If the *Mountain of Light* is a profuse bloomer, and that I am not yet sure of, it must make a good bedder, and put down *Flower of the Day*. Without flowers, you would not know the one from the other; but to balance the white and richness of the leaves there must be a blaze of good-coloured bloom. I saw here a large plant of the new variegated Geranium *Prince of Orange*—it is as sweet as the old form, and a far more genteel-looking plant, being more slender in all the parts. It makes a third shade in variegated Geraniums, and if I was on the turf again I would take advantage of this, and be the first to have a shaded bed of *Variegateds*. My bed would be a circle of nine feet through; the centre would be well raised, and planted with this variegated *Prince*, a yard through, then *Mangles*, two rows, and the outside of *Flower of the Day*.

Shrubland Rose *Petunia* makes a very good edge for vase plants, if allowed to ramble as they have it here, without much training. There is a beautiful bed of the Mulberry, or Port Wine-coloured *Verbena* called *Helen*, a very old one, but we must have it up again, if only on my own authority; it is a great favourite here, and also at Chiswick House, but there they missed it this season through its being a bad one to winter, although a very strong grower. After having it in mixtures at Shrubland Park, and seeing it last year in perfection by itself at Chiswick House, and this year at Bank Grove, equally good, I made up my mind that we can no more discard it than the *Emma* *Verbena*.

There is a large massive fountain finished in the end of the American ground this season, and, notwithstanding this wet summer, I saw they were watering this garden whenever two or three dry days intervened, and all the plants look and grow remarkably well and fast. *Libocedrus Chilensis* was twenty-nine inches high that day, and only nineteen inches when I called in April. Some of the best of the new Sikkim *Rhododendrons* are put out in this garden, and I saw the usually little dwarf *Ciliatum* grown and trained up to standard height on its own roots!

D. BEATON.

CHISWICK HOUSE.

HIS Grace the Duke of Devonshire, President of the Horticultural Society of London, allows his beautiful gardens at Chiswick House to be seen by visitors to the Society's July shows, year after year; and a beautiful grass walk through the orchard of the Society leads straight to the Duke's garden on the north side of it. On entering by the north gate, the green walk is continued southward for about 170 yards, to the centre of a long glass range of plant houses, and through the centre house of this range the company pass on to one of the very finest flower-gardens near London. On the last show day, July 9, the Coldstream's band struck up "Bundle and Go," a little before two o'clock, in the Society's garden; and away we went, by the green walks, as merrily as the "Camp" folks, down to Chiswick House—a regular procession, in fact, all the way; and no one durst break rank any more than if Lord Seaton himself were riding by our side. Here nothing about the fashions could be seen, however, unless one happened to fall into the procession behind four ladies, as some did, to my own knowledge.

On entering the north gate, the first note of preparation was on a grand scale; from the gate to the hothouses is about 170 yards, as I have just said, and there is a wide border on each side of the walk the whole of the way, and as straight as an arrow. Each of these long borders are planted with two rows of *Calceolaria angustifolia*, a clear yellow, and two rows of the *Compactum* Horse-shoe Geranium—the two kinds in alternate rows on both sides. I cannot say whether it was from the great length of these borders, the simplicity of the arrangement, the music, the soldiers, or the new bonnets; but sure I am that I never saw a more telling scene in all my travels. No doubt a good deal of the impression was owing to the great concourse of people passing at the time; the endless variations and tints in the ladies' dresses in the full sun; and the freshness of the plants and borders from the continuous rains the whole preceding night; but still, with all these aids, I do not believe there are two other bedding plants that would give anything near the rich glow which was here produced. The thing is a regular hit, and will last as long as terrace walks; but nothing less than a hundred yards long will do justice to it, and no other Geranium but *Compactum* will answer. This I learned from Mr. Edmond, his Grace's gardener, whom I was fortunate

enough to meet with in the crowd. The reason is, that *Compactum* keeps the trusses as regular and upright as soldiers on parade; you might look on from one end and not discover a single blossom or truss out of the true line. Compared with *Compactum*, in regularity of flowering, *Tom Thumb* and the rest of them are mere ramblers; and, as pot plants, *Compactum* and *Amazon* are by far the best, as they carry the best trusses of the whole family. The finest *Compactums* I ever saw or heard of were from scores of pot plants distributed along the front shelves in this same glass range. There was not a single plant shown in the Chiswick garden this season that indicated a better style of gardening than these very *Compactums*.

Unique Cerise is another very good pot plant for summer decoration in-doors; in a bed, out-of-doors, it is not nearly so effective. My seedling, *Lady Middleton*, is the nearest tint to *Unique Cerise*; the two are on a par for in-doors, but *Lady Middleton* makes one of the gayest beds in the garden, and stands all weathers. Some ladies are passionately fond of good tints in this class of Geraniums, and most ladies like to see them. I had a seedling six or seven years back—the tint is between pink, salmon, and cherry colour—and I recollect two ladies falling in love with it at first sight, and both declared it was the richest tint for a ball dress, for a young lady, of all they had ever seen in flowers; but, unfortunately, the shape of the flower is so much out of the fashion, that it would not do for a trade plant; however, after seeing the nice tints brought out in *Eliza Field*, *Princess*, and *Kingsbury Pet*, at the last show, I began to cross it with *Lady Middleton*, *Cherry Cheek*, and *Unique Cerise*, for newer tints, and better habit, if possible.

As Mr. Edmond has had great experience in this beautiful garden, and is at the fountain head of all that is new and good for the flower-bed, I noted down the principal varieties he used this season, as a guide for those far away, who have not such opportunities to select from. His scarlet Geraniums are principally *Compactum*, *Punch*, and *Tom Thumb*, and he uses them in about equal proportion; he likes *Punch* best for autumn, but finds it not so early as the other two, without a little extra encouragement in the spring before planting-out time. He uses four *Petunias*—the *Shrubland Rose*, *Shrubland White*, an excellent purple, called *Superb*—this seems the best purple I have yet seen for beds; and a very gay, streaked one—purple streaks on a light pink ground—called *Eclipse*: I think these are the best four in cultivation. *Superb* has a large dark eye, and an excellent habit for a bedder. *Mont Blanc* is his chief white *Verbena*, and his scarlets are *Gem of the West* and *St. Margaret*; two that are much alike in habit and truss, but the former has a light eye, the other a purplish eye. *Barkerii* is his dark crimson, and it is a better grower than *Inglefield Seedling*, the next nearest to it in colour. *Emma* is still the best dark purple. *Leonica* is his best purple; and *Imperatrice Josephine* he still uses for the best apology for a blue *Verbena*; and *Hamlet* is his next best blueish tint; and *Compte de Paris* is an improvement on *Heloise*, or blueish-purple. For low, long beds he has *Tweediana*. The second week in July being the grand day of the season with him for the reception of the visitors to the Society's Garden, experience has taught him that these varieties establish themselves sooner, and come earlier into bloom with him than others that are equally good later in the season.

Integrifolia and *Rugosa* are the two best earliest *Calceolarias*, and he uses them abundantly. *Kayii* does not answer on this soil, nor on many other soils; and *Amplexicaulis* is too late altogether for this garden.

Of variegated Geraniums, he has beds of *Flower of the Day*, *Queen of Summer*, and *Mangle's Variegated*;

but *Queen of Summer* is a poor thing indeed in most places.

He has beautiful beds of *Lobelia ramosoides*. This was first mentioned and recommended in THE COTTAGE GARDENER, and it has turned out just what I said from a single plant of it I saw exhibited from the Pine-Apple Place Nursery; it is the best of all the little blue tribe. Beds of the *Unique* Geranium are made here from old, stunted plants; young plants of it run too much to leaf, and give fewer flowers, and they come much later than from old, straggling plants. The best way to do this *Unique* is to strike it from cuttings in February, in smart heat, when it will root like Verbenas; and when the beds are planted in May, the young *Uniques* should be potted singly in small pots, kept a fortnight or three weeks in a close, cold frame, and then turned out into a bed of sand, saw-dust, or coal-ashes, and the pots to be plunged to the rim, there to remain to the end of September; they will root out through the bottom of the pots, and make a free growth, and produce flowers for nosegays, or glasses, all the autumn; but they are not to be cut back at all, even were any of them a yard long; the out-roots are trimmed off when the plants are housed, and the plants are staked, and kept in the same pots all that winter. The very tops are taken off next February for a fresh batch of cuttings, and the old plants are kept as cool as possible all through the spring, and turned out in May into the beds, and the shoots are trained at full length close to the surface of the bed; and, after such a long cramping at the roots, the old wood is so ripe that, on the first move of growth, flowers are up from every joint. Some such management is certainly necessary to get this beautiful flower in anything like profusion all over a bed.

Under very large old Cedars of Lebanon, in the pleasure-ground, they plant *Ivy* where grass will not grow, and cannot thrive, and it answers remarkably well, and so it will under any trees, where it is difficult to get grass. About the end of September would be a good time to fork up under Cedar-trees, and to wheel on some fresh earth, and plant young *Ivy* plants at about a foot apart each way; then, if they were to be well attended to the following summer, with a good soaking of water now and then, both the Cedars and under them would be much improved. We often have complaints about such things, and that is one of the best and least expensive ways I know of. I do not know any forest or ornamental tree that is sooner improved by a good top-dressing than the Cedar of Lebanon, and no manure or strong water is so good for it as three or four inches deep of any fresh earth from a common or road-side bank, after first scraping off the dry loose surface caused by the fallen leaves.

In the experimental ground of the Horticultural Society, I saw two or three very nice things for the first time:—A white variety of *Seline Pendula*, a most useful annual to come in at the end of April, and so on to Midsummer; and it may be sown now or any time between this and the end of August, on any rough spare piece of ground, or among shrubs, the plants will shift for themselves through the winter, and will remove in the spring as easily as cabbage plant.

Dianthus Gardnerii, a rich, purple flower, very good indeed, and propagated like other pinks. *Cenia turbinata*, a low, yellow-flowering annual, with leaves and growth like Chamomile, was new to me; it is more curious than otherwise, but may be useful for rock-work. *Venidium eximium*, another very curious rock-plant, a composite, and I suppose an annual, with yellow flowers, not unlike a *Gazania*; and *Monolopia californica*, a nice grower, and full of yellow flowers, a capital bedder, if it lasts long enough. It comes nearest to *Calichroa platiglossa* in growth and looks, but is altogether a more genteel looking thing; an annual, of course, and one of the

newest from California, except Mr. Veitch's new yellow *Leptosiphon*, of which seeds will be advertised immediately for autumn sowing.

D. BEATON.

STANDARD FLOWERING SHRUBS—THEIR UTILITY AND MODE OF SUPPORT.

TAKE one of our great men—a recognised arbiter in gardening taste—and before you could fix upon his very opinion, would you not, and with no great success, be under the necessity of comparing his past and present views, and how these, again, were influenced by circumstances? For instance, accompany him to the splendid gardens in front of the mansion at Trentham. For a moment, the beautiful ground-work is shaded by the large, beautiful, standard Laurels, that, as it were, *lift* up the ground, and give to it massiveness and dignity. Our critic is in ecstasies. In his musings he is transported to the gardens of Italy, and the warmer parts of France. In these Laurels he sees nothing but Orange-trees, and the clever mode in which the deception is accomplished yields an additional pleasure. Hint that they look very artificial, and you are told the more they look so the better—everything in their vicinity being stamped with art and design. Ask if they would not have done as well planted out, instead of being raised above ground in tubs; and you are told, No. The tubs serve two purposes—completing the illusion as to the Orange-trees, and giving to all a bolder stamp of the artistic in design, as opposed to the more natural in style. With such ideas of standards seeking a comfortable lodging in your brain, you enter an exhibition room, or walk beneath the awning that shelters exhibition plants. Almost the first things that strike your eye are some pretty standards of plants you had been accustomed to look upon as low-growing bushes. You cannot conceal your admiration, but what is your surprise, to hear your *mentor* ejaculate, “What taste! unnatural! such stiltedness! regular mops!! a little longer handle, and what excellent fly and spider flappers for the housemaid!!!” But while you listen, thoughts are galloping through your mind—such as, that in the northern parts of the Island the Portugal Laurel is *naturally* more of a bush than a standard tree; that there is a difference in the beauty of the fine standard thorn on your lawn, and the brake of those bushes in your meadow:—that your favourite Rose-tree, with a head some two yards in diameter, has attractions which a bush on the ground, which you must stoop to examine, does not possess; and then, glancing along the tables, evincing such wondrous cultural skill, the idea will pop itself forward, in the Geranium group, for instance, that the level uniformity in size and height detracts from their beauty, merely because there is little opportunity for light and shade, and no conspicuous point, *uplifting* as it were, on which the eye can repose, and which some beautiful standards raised above the common level would unquestionably give. But the words of the great arbiter in taste are ringing in your ears; and, amid conflicting feelings, you hardly know whether to give up the understanding this matter of taste in despair, or quietly follow the windings of an acknowledged genius in the matter, or manfully resolve, after taking a few prominent principles for land-marks, to follow out the promptings of your own perceptions of the beautiful.

I believe that somewhere in this work I have said something of small, isolated standards, such as *Rose-trees*, with heads a few inches in diameter, as having too much of the mop style to be truly beautiful. It is true, they must have small heads before they have large ones; but that, though it should give us patience, need not interfere with the decision of the present. The

consciousness that we are waiting for *size* will not remove, though it will modify, the moppish appearance. To realize the greatest amount of pleasure from standard flowering-plants several requisites seem necessary, such as the following:—The object intended should be apparent; they are better adapted for lines and avenues than for groups by themselves; if isolated, the plant should be large enough to command attention for itself alone; grouped with dwarfer things, they give to the group variety, size, elevation, and dignity. Mr. Beaton lately mentioned how this was done with a collection of plants in a room; how the standard increased in height without lessening the quantity of the bloom below. I lately saw this nicely carried out in a garden over which a friend presides. Two Rose clumps, at a distance from each other, had just enough of standards to give the clump elevation, without shading the more numerous dwarfs below. No planting of standards, or of dwarfs *alone*, could produce such an effect. As if to illustrate the fact more forcibly, in the same garden, presided over by a man of first-rate talent, was a group of standard Roses, and in a prominent place, too; each standard had its little circle of earth on the beautiful lawn, and these were so close to each other, that I thought how careful the workmen must be in wielding their scythes among so many stems so near to each other; and how much time must be required in clipping and cleaning round every individual Rose-tree; and yet, after all, how humpy-dumpy, meaningless, and unsatisfactory the whole affair looked, with only one redeeming quality about them—the beautiful Roses with which they were furnished. Had these standards been made into two groups instead of one, the ground dug between them, and planted with dwarfs, though they might have assimilated the other two beds, the satisfaction would have been greater, and the labour, for a season, considerably abridged. I have several times noticed Rose-trees planted avenue fashion by the side of walks, as they are with good effect at Courteen Hall, but the result, in such cases, will be striking, in proportion to all the plants presenting a similar outline, and all marked by largeness rather than diminutiveness in their dimensions.

But almost equal in importance to the first postscript of a lady's letter is the principal flower group at Courteen Hall, for demonstrating how a few standards, breaking the otherwise uniform level of flower-beds, gives to the group extended size and elevation, "lifting the beds up," as Mr. Gardiner expressed it, and thus forming permanent points for the eye to rest upon. I can speak feelingly and experimentally on this subject. Several years ago, I removed a group of beds of Roses, but left a number of large standards of early-flowering kinds, the same beds being filled with bedding-plants. The Roses left were attractive before the beds beneath were full, and by that time, annual climbers, such as *Maurandias*, and the small-leaved *Tropæolums*, &c., were planted against, and by the autumn covered the heads of the Rose-trees after their wood was ripened.

The same group has been changed several times since, but it has never been so engaging as it was for several years, when masses of bloom from these creepers stood prominently above the general colour of the bed, and thus gave to the whole elevation and space. Mr. Gardiner does not, by any means, place these standards thickly—generally one in a moderate-sized bed; and then, the standards themselves are not of equal height, as here variety again is felt to be valuable. They chiefly consist of *Fuchsias*, strong plants of the giant Scarlet Geranium, and there is one very fine old plant of the *Cassia corymbosa*, some five or six feet in height, with its head about a yard in diameter, and quite a mass, the other week, with its bright orange flowers.

Any one who tries how fast the whole tribe of *Fuchsias* grow with a little extra heat in the spring, will have

little trouble in making good standards out of even tiny plants, the chief thing being to direct all the energies of the plant into one leader; to pick out the buds from the axils of the lower leaves as the stem advances; to pinch out its point, after it is high enough; and then remove every bud, except what you want at the points, to be developed into shoots. When once formed, taking them up before winter, and protecting roots, stem, and head, from frost, in any out-of-the-way place, giving them light as the buds break in spring, and what pruning they need, and planting out again in May, is most of the trouble they require. Among others was a fine plant of *Corymbiflora*, just coming into full bloom. Scarlet Geraniums require similar treatment. The stem will look best if the young plant was never stopped until it gained the height of from three-and-a-half to five feet, but rubbing out the buds as the stem advanced. Mr. Gardiner raises and pots his plants before winter, and keeps them at the back of the greenhouse, or under the stage, until fresh growth commences in the spring.

The *Cassia Corymbosa* is generally treated as a stove plant, and it looks splendid in such a position during winter, when in bloom; but I believe that Mr. Gardiner, after lifting it in the end of autumn, and potting it, keeps it in the warm end of his greenhouse during the winter. He will be sure to inform us, if I am in error. He recommends it strongly for bed culture, and I have no doubt that old plants, hard pruned in, would do well in sheltered places. Cuttings of young shoots strike easily in spring in a mild bottom-heat.

And now for the mode of supporting these Standards, Roses, &c. The means adopted have been legion, and each amateur has his favourite mode. I am not quite certain how Mr. Gardiner's plan will apply in very exposed and windy places, though I am rather sanguine; but, in common places, moderately sheltered, it is alike the most simple and most effectual. Just allow me to contrast it for a moment with a pet plan of my own for standard Roses. Iron rods were used, with three long and wide-spread prongs at its base, for going into the ground. The small upper end was square-shaped. Two rods of iron, $\frac{3}{8}$ of an inch in diameter, from 24 to 36 inches, or more, in length, according to the size of the Rose-tree, were welded together at the middle, at right angles; and, at the point of junction, a square hole was there formed to go upon the top of the iron stake. Previously to placing it there, the four ends of the rods were bent downwards—these ends were then connected with a circular band of wire, and, if the dimensions of the frame were large, one or more circles of wire would be fastened between the outside and the central point of junction. When this frame was placed upon the stake it resembled the skeleton of a parasol with a good long handle. The shoots of the Roses were fastened to this frame, and, in tolerable weather, all went right and merry as a marriage bell; but, after a rough night, I have found, in the morning, fine plants nearly prostrate, roots and iron supporter being alike next to out of the ground; while, in several cases, I have found both the stem of the plant, and the stout iron rod, broken completely through. To remedy this, at the four ends of the stout pieces of iron of this circular frame, I fastened one end of a stout string of wire, and the other end to a stout pin of wood inserted in the ground, and as long as these strings were fast to their moorings there could be no danger. But when the wind blew loud and long from one direction, the severe strain on one side was apt either to pull the wire right through the wood, or pull up the wooden stake altogether, and then I was no better off than before, though this last happened very seldom. Now I can see that one great error I committed was connecting the support for the head with the main support to the stem, and thus, the larger the head of the plant, the greater would

be its leverage power, in disturbing alike roots and stem supporter. Almost every system I have seen or heard of has more or less of this fault. Now, this is what Mr. Gardiner next to completely gets rid of, and will get rid of altogether, if it succeed perfectly in exposed places; and, I must say, reasoning from analogy, I have great hopes that it will. Most, if not all of Mr. Gardiner's standards are supported, as far as the point where the head forms, by a single stout, green painted stake.

A circular hoop of stout wire is placed over the head of the plant, the diameter of the circle being in proportion to the diameter of the plant; one man holds it level on one side, and another on the opposite side, and while they respectively hold it, each ties a stout branch to the hoop, and so the process goes on, until all are secured. In the case of Roses, the hoop is held rather lower than where the head is formed; this admits of the shoots being slightly bent as they are secured, which causes the buds to break more regularly, and affords more room for strong shoots to grow in the centre of the plant, to be brought down again next season. When wanted, several hoops may be used. A file, and a pair of nippers that cuts wire, will enable any labourer to make them with great rapidity. Cottagers, to whom wire might be an object, could form them of bramble, or hazel, &c. It will be seen there is no connection whatever between the hoop and the stake; in fact, the hoop supports the branches, and the branches hold up the hoop. When the wind blows on one side, the very strain produces a reaction on the other, and thus the balance is restored without greatly influencing the supporting stake, or, consequently, the security of the plant. Some of our friends may burst out—"Mueh-a-do about nothing—any body might have devised such a simple thing as that." Aye! but why was it not done? There is nothing difficult when known. There is always a connection between the simply effective and the truly great and generally beneficial. I am mistaken, if this Gardinerian mode will not give an impulse to standard growing, for ornament, as the supporting of them efficiently and neatly was the chief hindrance.

R. FISH.

JOTTINGS BY THE WAY.

(Continued from page 288.)

Botanic Gardens, Birmingham.—The lower part of these gardens is occupied with American plants, of which there is a good collection. There is also a small pond for hardy Aquatics. I observed in it large patches of *Calla palustris*, *Typha latifolia*, and *T. angustifolia*, *Menyanthes trifoliata*, and others. Indeed, they have grown so freely, and spread so rapidly, that the pond is in danger of being filled up with them. There is also a conservative wall, against which grow admirably, *Edwardsia microphylla*, *Arundinaria falcata*, *Forsythia viridissima*, *Magnolia*, *Photinias*, &c. In front of this wall there is a large piece of ground occupied with a Rosary, forming three sides of a parallelogram, the centre being occupied with several beds on turf, in the modern style of massing in colours. This Rosary is quite concealed from public gaze, being in a retired corner, hidden with belts of shrubs. The visitor comes upon it unexpectedly, and is most agreeably surprised. The trees and shrubs are planted in their natural orders, but many of the labels are unfortunately defaced or obliterated, but it is intended to renew them shortly.

By natural orders, I mean, all the various species of Oaks that are planted near each other, and also the Conifers, the Ash, the *Prunus*, or Plums, the Thorn (*Crataegus*), the *Spirea*, &c; thus rendering great assistance to the unlearned, as well as the well-informed,

botanist. This massing principle is also carried out with the annual flowers—large patches of one kind forming a bed quite showy and attractive, even at a considerable distance. This massing is far better, and more effective, than if the annuals were sown in small patches, dispersed all over the ground. I was particularly pleased with the *Nemophila insignis*, and *Collinsia bicolor*, and several others grown in that style.

On the lawn I observed a large clump of variegated Hollies, at least, there were twenty distinct varieties of them, and the greater part of them were handsome specimens, from twelve to fifteen feet high. On a sloping bank, still lower down the garden, there is a large bed of Scotch Roses (*Rosa spinosissima*). The garden abounds in fine specimens of both deciduous and evergreen trees and shrubs. I particularly noted the following:—

The *Weeping Beech*, *Fagus sylvatica* var. *pendula*. This is a very curious variety, it both weeps and grows upright. The leading shoot at first droops, but gradually recovers, or attains an upright position, but all the side-shoots droop downward almost perpendicularly. It was thirty feet high, and the lowest tier of branches swept the ground.

Two majestic, handsome Oaks, that were on the ground many years before the gardens were formed, are now more than sixty feet high, with trunks in proportion. These trunks have circular, neat, iron seats placed around them, and a more agreeable, shady resting place, on a warm day, can scarcely be conceived.

That rare variety, the *Crataegus stricta*, or Upright Thorn, has attained the height of thirty feet.

I noticed, also, that rare tree, the *Cerasus mahaleb*, or Perfumed Cherry, the top of which covered a space of twenty-five feet diameter, and its height was about the same in diameter.

The *Cotoneaster affine*, an immense bush, was in full flower, and, as Mr. Catling informed me, the blossoms are succeeded by handsome black berries. Just in the front of the Victoria House there is a very large specimen of *Gurria elliptica*, fifteen feet diameter, and seven feet high, and the rare *Betula Jorolensis*.

The garden is rich in *Coniferae*; they were planted originally on a bank facing the west, and, consequently, many of them are bent forwards from the quarter, especially such heavy-branched species as *Pinus pinea* and *P. Austriaca*. Others, with smaller foliage, and light branches, keep their upright position. Here I observed the evil of keeping *Coniferae* too long in pots. A good specimen of *P. Pallasiana*, 20 feet high, was blown so much on one side, evidently from wanting spreading roots to retain firm hold of the soil, that had it not been timely propped up with strong, forked branches of trees, it must have been torn up by the roots long ago.

Araucaria imbricata, a handsome tree, clothed with branches down to the ground, 22 feet high.

Cupressus torulosus, in an exposed situation, had suffered from last winter's frosts, but, in a sheltered place, was uninjured.

C. Lambertiana, uninjured; 21 feet high.

C. sempervirens, 18 feet; uninjured.

Cedrus Deodar, 15 feet.

Cryptomeria Japonica, 14 feet; very dense and unique.

Abies morinda, uninjured; 20 feet high; a very handsome symmetrical tree.

Picea nobilis, a very fine specimen of this rare pine; quite uninjured; 12 feet high.

P. Webbiana, 18 feet; injured to a considerable extent.

Pinus cembra, 20 feet; a handsome tree.

P. ponderosa, a fine, upright tree, 25 feet high.

P. Austriaca, a densely clothed tree; 25 feet high, and the branches covering a space 18 feet diameter.

P. excelsa, a young flourishing tree; 18 feet high.

P. macrocarpa. This fine pine is decidedly hardy. The one here is 25 feet high, without an injured shoot.

P. Sabiniana, a nice young tree, 15 feet, but a pigmy compared with a specimen I saw the day following at Rolleston Park, Sir Oswald Mosely, Bart.

P. taurica, a spreading, handsome tree, 22 feet by 18 feet diameter.

Taxus fastigiata (The Irish Yew).—Of this handsome evergreen tree there were several fine specimens, from 12 to 15 feet high.

Mr. Catling, last autumn, tried the somewhat hazardous experiment of removing some large Conifers, especially the *Picea nobilis*, mentioned above, and a *P. Webbiana*; the *Cedrus deodara*, and the *Cryptomeria japonica*; all those have grown and are doing well.

These gardens have been long celebrated for an unique collection of hardy Ferns. I saw a fine specimen of that very rare variety, the *Asplenium Goldianum*; this is planted in a peat-border in the American Garden. Taking a bird's-eye view of the whole garden, I must say, that considering the wet season, which, as is well known, greatly encourages the growth of weeds, the garden throughout is in good keeping; the turf is close and dense, and the walks firm and dry.

The next place I visited was *Armitage Park*, about three miles from Rugby, in Staffordshire, the seat of Josiah Spode, Esq. Very unexpectedly, I found here a curious, interesting, and beautiful place; the country is undulated, and the views from the mansion extensive and diversified. The grand attraction of this place is the Victoria House, and Stove Aquarium, each a square of thirty-five feet diameter. There is a peculiarity about heating the water for the *Victoria* that I have not observed elsewhere. The tank containing the water is about three feet deep, and the pipe to heat it with is but two inches in bore; and, what is more remarkable, is the position in which this pipe of hot water is placed; instead of being, as is usual, laid at the bottom of the tanks, it is placed near the sides, and within six inches of the surface. Mr. Bolass, the clever, intelligent gardener, assured me this pipe heated the water quite sufficiently even for the *Victoria*. When I saw it it was in perfect health, leaves large and finely turned up at the sides, showing the underside of a fine crimson colour. One flower was finely expanded and another in bud. Mr. B. says, he finds the soil for this Queen of Lilies requires to be of the strongest texture, such as a good gardener would use for Melons; and certainly he is an authority, for his plant showed that it liked the soil he had planted it in.

In the other tank, which I have named the Stove Aquarium (though it is in the same house as the *Victoria*, the walk in the centre separating the two tanks) there was in flower a rare and highly-coloured *Nymphaea*, a variety of *N. Devoniana*. The largest leaves measured fifteen inches across; they were nearly round, and deeply dentated at the edges. The flowers are about the size of our common Water Lily, but more cupped, and the colour is rich bright crimson. I have no doubt this high colour was brightened very much by being so near the glass, the house being so constructed (a low span), together with the tanks standing three feet above the walks, as to bring the plants in the water within six feet of the glass. There were several other species of *Nymphaea*, but only this crimson one in bloom; a large, long tank on one side of the house is filled with *Nelumbium speciosum*. On the kerb stone round the tanks, as well as on a broad shelf next the doors, *Lycopodiums* were placed, and in this moist, warm atmosphere, grew with surprising luxuriance, as did also the Pitcher plants, and many species of *Eschynanthus* flowered profusely. The gardener tried an experiment this spring of forcing Melons in this Aquarium, and succeeded perfectly. I saw the plants, but the fruit

had all been cut. They were planted in a large box, and trained up to the roof.

Leaving the Victoria House, which, by-the-by, was not so hot as I have usually felt such houses, we passed in front of a range of glass houses devoted to the culture of the Grape, the Peach, and the Nectarine, and more than 100 yards long. A door at the end of the walk admitted us into the pleasure-ground. Taking a short turn, a rising ground came in view, with a kind of pass, or hollow; into this the walk led us along till we came to a tunnel cut through the hill. Through this covered way we passed, and at the end a view burst upon me surprisingly beautiful. Imagine a large hollow, or kind of crater, in the top of a hill, in the centre of which, standing upon a rock, a beautiful circular greenhouse, with rocks of various sizes dispersed about and around it, and all covered with my favourite hardy Ferns, with here and there patches of Rhododendrons, Heaths, and other appropriate shrubs, and rough blocks of stone scattered amongst them. The scene was truly surprising and beautiful. The greenhouse is a unique thing, set upon walls hewn out of the solid rock; a flat rock for the central stage, the sides of which are covered with more tender Ferns, and elegant mosses and Lycopods. The Heaths and other plants were in pots, set upon the rocky stage and platforms (I should have preferred them in rustic vases): it looked like fairy land. We emerged from this hollow on the opposite side to that we entered, and again came out into the dressed ground, the contrast between the two being very striking and complete. A winding walk between mimic hills brought us in view of the mansion, a solid stone-built structure. I strongly suspect the hollow we had just left was made by getting out of it the stone to build this house with. On one front of the house are terraces: the first, beds of flowers on turf; the second, turf, without beds; and the third, beds of flowers in a different style to the first. The beds were well furnished, and blooming profusely. In fact, the best show of flowers in the open air I have seen yet this season was there. Beyond these terraces there is a circular space, in the centre of which is a fountain. A walk surrounds it, and an arbour of climbing Roses—the sort used is an evergreen variety named *Felicité perpetué*. It is a pretty medium-sized Rose, and a most prodigious bloomer in large clusters. The way from this cool arbour of sweet Roses led us into a rocky glen, the sides of which were covered with the larger-growing Ferns, forming “a gloomy shade:” this way is winding, and brings the visitor to a door, which opens, and reveals a view of Orchids and moss-covered pillars. This is another wonderful change. Passing through this Orchid house, in which I observed some good *Stanhopeas* in bloom, we came to the vineries, &c., noticed previously. A more interesting and varied place I never had the pleasure of seeing. Mr. Spode allows his beautiful grounds, gardens, &c., to be seen twice a week during the summer season—I think the gardener said on Tuesday and Thursday. A greater treat to lovers of gardening in various styles cannot be imagined.

T. APPLEBY.

NEGLECTED PLANTS.

It cannot have escaped the notice of those whose memory will carry them back a few years, how many useful and ornamental plants have been ushered before the world in such flattering terms as would seem to leave little more to desire in the way of improvement in their respective species; a new variety of vegetable, a week or ten days earlier than any that preceded it, and another one earlier still than the last one, and so on, until the gardener would be inclined to suppose that if

the statements were all true, the variety in question must be ready for use by the time (if not before) it was sown.

As a counterpart to this, Florists have been equally industrious in multiplying the numerous families they have, of late years, taken under their patronage, and, consequently, adapted to themselves the same spirit of rivalry in eulogising their respective favourites. To a certain extent, this is not only excusable, but highly laudable. The censorship lying with that all-powerful agent, "the British public;" but John Bull is not infallible any more than other mortals; and though his opinion in horticultural matters may often be dictated by judgment rather than by caprice, yet there are cases in which the latter prevails, as will be seen by the singular conclusions he now and then arrives at. Certain favourite plants of his, as well as certain schemes, seem to him to be indispensable to the well-being of society, and he rarely abandons anything he takes in hand, be that the planting of a potato, or the discovery of a north-west passage.

It would be unjust to horticulturists to say that their endeavours, the last few years, have not thrown any light on the sad disease which has been devastating the Potato, season after season, with some slightly varied results, the crops of our cottagers, as well as the more extensive growers who have embarked in the trade honest John Bull so much elings to. This tenacity has, of course, led to many experiments in the way of remedying the evil, and many useful, and apparently practical, modes of treatment have been pointed out, as well by the experimentalist as by the theorist, but all of them have, in their turn, fallen into oblivion, or been found not to be effectual, save under the treatment of the originator; and many ludicrous notions regarding the cause, as well as the remedy, of this curious disease, have been before the world, and yet the disorder rages with all its violence, and, in all probability, will be worse this season than for many that are past. It becomes a matter of serious import whether the many ingenious contrivances to counteract it have not been misapplied; yet nothing is to be had without enquiry, and we do not find fault with John Bull's tenacity to an old-established favourite, still less do we attempt to suggest any better remedy than some of those already before the world. In fact, it would require a considerable amount of study to devise any scheme or idea that had not either been tried or presented to the world in some shape or other long ago.

Leaving the Potato, which, I am sorry to say, threatens to become much diseased in the neighbourhood I write from, I will take a glance at one or two things which John Bull, in his capricious mood, has thought fit to neglect or abandon; and, taking advantage of his versatile character in the matter, will hazard the invasion of another one's province.

Whenever a new plant or flower is first "sent out," it is usually announced in terms such as makes every one fain to obtain possession of it, provided it emanates from reputable hands. Now, it not unfrequently happens that the public, after having witnessed it once or twice, and seen it, perhaps, have a place on some winning stand, take a dislike to it, in consequence of its habit, or some other point, not confirming to the standard they had laid down as the one of excellence. Why they should be so difficult to please in some cases, and so easy in others, is not for me to define; but it is a matter of notoriety, that many valuable and beautiful plants fall into neglect in consequence of the fashionable world not caring for them, or giving an adverse opinion on them.

It would be easy to mention several of this class; but, first of all, let me name the *Willow-leaved Veronica*, which, blooming in autumn in such profusion, assuredly

deserves more attention than it receives, while, in point of habit and healthiness of foliage, there is little left to wish for; yet this pretty plant is seldom seen; and since the first year or two of its introduction, it has fallen into such a state of neglect as makes it almost unknown, except amongst the growers of old plants, which it certainly is not. As young plants are easily obtained by cutting, and as they stand the winter with but slight protection, and in many seasons require none at all, it becomes a matter of astonishment whether its neglect arises from mere caprice or ignorance of its merits. The latter, we hope, is the case with many who have not seen it in good condition in their flower-borders at a time when little but late Dahlias and Chrysanthemums presented anything of "a show."

Though this *Veronica* is not an old plant with us, yet it has been established long enough to be known far and wide, and it is increased with so much ease as to be in every cottage garden in the kingdom, for seeds are produced in numbers scarcely excelled by any plant whatever, and it strikes as freely from cuttings as a Willow, that there is no excuse for it not being in every collection, however meagre; and although hard winters will kill it, still it is only hard winters that so affect it, and it may be regarded as hardy as the Tea-rose, and similar things; being of itself a shrub, or tree, it is not right to compare it with anything but plants of a similar habit, and we have no doubt but the same amount of protection will preserve the *Veronica* that is wanted for the Tea-rose; and as our readers are aware this is only a sort of slight covering of fern, furze, or other evergreen boughs, the amount of protective matter will not be much. When in a mixed flower-border, it is customary to leave the plants to their fate until the prospect of severe weather renders some covering necessary, in order to protect them against the evils of a frost so much sharper than they were accustomed to endure in their native place.

Another neglected plant, though of much older introduction, in fact, so old and well known that it would be difficult to find any one who has not some knowledge of its existence, is the *Hydrangea hortensis*, or old variety. The more recent introduction, "*Japonica*," is far from being as pretty.

This fine old plant is to be found in many positions; at one time adorning the parterre of the nobleman; at others, growing in an old make-shift-of-a-flower-pot in some humble cottager's window; while, at other times, it is seen growing in some shrubby border, when respect for its appearance has led to its being allowed to ramble, not only over the small fry in front of it, but also to usurp a good part of the walk, or grass plot, by which such border is bounded. We do not, by any means, find fault with the license granted it; on the contrary, it richly deserves it; and we hope to see it more extensively grown in the latter way, for it is tolerably hardy, and not at all likely to give way to the frosts, or other inclemencies of any ordinary season, although we now and then have one like that of 1837-38, which makes this, as well as many other plants (including natives), suffer by its violence; however, in general, the *Hydrangea* will thrive, and produce abundance of flower-buds in a fine season, and on a dry soil; which buds are also certain to produce blooms the ensuing season, unless in the mean time some unexpected severity has deprived the shoot of vitality. Moreover, the plant is also so accommodating as to root freely from ripened wood in spring, as well as from young shoots in summer, that it deserves our acknowledgments on that score; and as these ripened shoots strike root, and, where the embryo root had been formed, bloom likewise, it is from thence that we so often see such nice heads of bloom on plants in five or six-inch pots. Now, this is very easily accomplished, by all having a good plant to cut from;

for a very little experience will enable the operator to ascertain which is a flower-bud and which only wood, the former being more plump and bulky. Cuttings five or six inches long root freely with very indifferent treatment; and a number of them may be depended on as being likely to grow to a certain height, and no farther, so that the flower-gardener has no difficulty in giving them their allotted place.

While calling attention to neglected plants, I may as well, also, remind our flower-gardening friends, that in the many improvements certain favourites have undergone, there are some worthy ones which are but little improved, more especially in the points which make them desirable as ornaments in the flower-garden. *Chrysanthemums*, for instance, have been described as having to possess a certain number of good qualities to approach to anything like excellence; but one point of the most vital importance to flower-gardening is omitted, we mean "earliness;" for however good the qualities of the flower may be, they are valueless for out-door purposes unless they be sufficiently early to display themselves before severe weather sets in. We should, therefore, like to see varieties introduced that would flower without any extraordinary attention some considerable time before the period arrives for their being cut off. If they could be got to expand their blooms by the middle of September in the common flower-border, they would have a better chance to serve the season; whereas, most of the varieties now in use too frequently have to succumb to King Frost just as they are beginning to bloom, to the no small disappointment of young cultivators, who may have prided themselves on the healthiness of their plants, and their prospects of superb blooms; and even if the autumn frosts should keep away, the amount of moisture with which the air is charged is equally fatal to their appearance; besides which, the season is in a manner gone wherein out-door flowers are regarded with interest.

J. ROBSON.

HARVESTING OF WHEAT.

A GREAT change in the opinion of farmers has taken place, within a few years, as regards the best time for commencing the cutting of Wheat; it is now cut much earlier than formerly. It is, however, often delayed beyond the best period by many farmers, even at the present time, after all the experience they have had as to the advantage of early cutting. I often hear it said by parties, that their Wheat is quite fit for the sickle, but they have other important work to do before they can commence harvest; but this, although a very common occurrence, is a most objectionable practice, and usually attended with more or less loss, and goes far to prove that sufficient foresight has not been used in order to anticipate the time of harvest, and thereby arrange other important farming operations, and complete them in due time.

When Wheat is fit to cut, it is the best practice to bring all the power that can be mustered to bear upon the cutting of the crop, for it is of immense importance; and if any proof of the fact were necessary, it is only to refer to past seasons, and it will then be remembered that the best quality of Wheat was that portion of the crop first cut.

The colour of the straw generally indicates the time when this crop may be safely cut, but the best guide is the examination of the grain itself; for if found not to

yield any moisture when pressed between the finger and thumb, it is then in the best state for cutting. The grain soon becomes of less value if allowed to remain uncut; for although the effect of the sun is all-important towards ripening the corn, and bringing it to maturity and perfection, yet, after that period, it has a damaging influence, and gradually changes the colour of the grain, and reduces its weight and quality.

Several different modes of cutting are in use at present. Reaping is the old method, but not much in practice now. The straw lies so very straight in the sheaf, that after taking a heavy rain it does not readily get dry again without untying the sheaves, which is attended with loss and waste; the only advantage in reaping is by cutting above the weeds or clover, in case the crop is foul, or seeded for a clover crop the following season.

Mowing is advocated by many, and it certainly answers very well with a good standing crop without many weeds amongst it; but in case the crop is lodged, and beaten down by wind and rain, mowing is impracticable, or attended with great loss and waste. It is, however, the cheapest method by which Wheat can be cut by hand-labour, and secures the greatest portion of straw, it being cut closer to the ground than by any other mode. The best plan in mowing is to throw the swarth to the standing corn, women or boys following to separate the swarth, and bind it into sheaves.

The third and last method of cutting by hand-labour is called bagging, or fagging, which has advantages, to some extent, over the other modes before alluded to. When the crop is very stout and heavy, or much laid by the weather, this is by far the best plan of cutting, it being most expeditious and least wasteful. By this method, the corn sustains but little injury whilst exposed in the field, for the sheaves being loose and uneven at the bottom, in case they take rain, they are soon dry again; and, from the same reason, should a portion of grass or weeds be tied-up in the sheaves, they are soon dry and fit for carting. It has always appeared to me that, as a general method, fagging affords nearly all the advantages attained by either reaping or mowing, without the disadvantages.

Having said thus much relative to cutting Wheat by hand-labour, I propose to consider how it may be cut most beneficially by machinery. As labour becomes more scarce and dear, the reaping machines will, no doubt, be brought more into requisition; and although instances may be adduced of these machines being used with some advantage during the last year or two, I am still of opinion that great improvements must be made in them before they will become of general utility.

The manner of proceeding with the crop after being cut is the next thing to be considered; and the old method of allowing the crop to lie in grip, thus remaining upon the ground for some days, is the worst possible plan, involving, as it does, more or less damage to the grain, either in rainy or sunny weather.

As soon as the corn is cut it is desirable to have it tied into sheaves of a moderate size immediately, and

set up into stooks, or shocks, containing ten sheaves each; and, as a general rule, the corn should not be cut unless it is dry enough to tie up in sheaf. The manner of setting-up the stooks is of some consequence; and, to provide against wind and rain, the sheaves should be set in a sloping position, by placing them wide apart at the bottom; the ears will then settle well together at the top, and, in a great measure, prevent the access of rain into the sheaves. Some parties prefer setting up the sheaves in a small circle, each top leaning to the centre, and then take a sheaf, spreading it out in a reversed position over the pile of sheaves in the form of a hood, which serves to keep off the rain, and make the pile stand firmer against the wind. But this method, unless carried out with great care, is of but little service, and it being more expensive is not likely to come into general use; besides which, the wet harvests, which render any unusual precautions necessary, do not occur oftener than once in seven years, upon the average of seasons.

In carting Wheat to the stack, or barn, I believe many parties are not aware how soon this may be done with advantage, after being cut and set up into stook. Should the crop be free from weeds, and the weather hot and dry, the sooner the Wheat is carted to stack, or barn, the better, provided the straw is sufficiently ripe and dead, so as not to heat in the stack. When the sun shines, and the weather is hot, without rain, the Wheat will be fit to carry to stack about the third or fourth day after cutting, provided it is free from weeds, and has not taken rain.

It is not necessary, as some farmer imagine, that the grain should be quite hard before it is stacked. I have often carted Wheat in dry, hot weather, when the grain has been comparatively soft, and have thrashed and delivered the grain to the miller at the end of twenty days from the time of carting, the corn being in a hard and brittle state, and the weight of the grain being greater than at any after period of the year. The fact is, that Wheat, by remaining in the field after it is once fit to cart, if the weather be ever so fine, receives damage by the action of the sun; it loses its bright, blooming colour, becomes thick in bran, and weighs light; in proof of which, if a sample is taken from the inside of the sheaf, where it has never been exposed to the sun, it will prove much better than one selected from the ears on the outside of the sheaf. I would here observe, that carting of Wheat is often delayed unnecessarily, from some circumstances in the business of farming, such as the sowing of backward Turnips, and other comparatively unimportant work; and it is often delayed by waiting for a large quantity, or the produce of a particular field to be ready at the same time; but to show the bad policy of this manner of proceeding, I would call attention to the seasons of 1848, and 1852, in both of which, after the rains began, the whole crop of Wheat not carted was seriously damaged; and I remarked, in both seasons, that some farmers got into stack and barn a large portion of their Wheat crop before rain set in; whilst others, upon ad-

joining farms, never carted any Wheat without being greatly injured. These circumstances show at once the propriety of carting Wheat as soon as it is ready, without regard to other comparatively trifling farm operations.

I prefer stacks of a moderate size—those containing about thirty or forty quarters of grain are best, they are easier got in or thrashed out on a short winter day, and the corn is not so likely to heat in the stack. Stacks made round are generally best, and when intended to be kept or held over a year, should always be built upon a stand to secure them from vermin.

JOSEPH BLUNDELL.

LONDON ANNUAL SUMMER POULTRY SHOW.

THIS first Summer Metropolitan Exhibition of Poultry was held on the 27th, 28th, and 29th of July, at the Bazaar, King Street, Portman Square; and whether we view it with reference to the aggregate amount and merits of the birds, or the excellence of the arrangements, we have no hesitation in pronouncing it to be the best summer poultry show that has yet been held. Nor will we pass over, in this tribute of praise, the Secretary, Mr. Catling; and most sincerely do we wish that all secretaries of similar institutions would not only imitate his unweariable industry, but his undisturbable good-humour and courtesy. We hope that the attendance throughout was good; but, however numerous the visitors may have been, they will be still more numerous next year, when the cabmen's strike will not prevent many from visiting the Bazaar who were so prevented on the present occasion.

Our praise must not be withheld from the attention paid to supplying the birds with food, dry, moist, and green; nor from the sedulous care bestowed upon removing and breaking the eggs as soon as laid. Praise is equally merited for restricting the show to three days, and for avoiding altogether exhibiting by gas light. These humane considerations for the comfort and health of the birds we yet hope to see imitated at Birmingham, for they are far more worthy of consideration than the increase in the value of the prizes.

The Silver Champion Cup was fairly won by Mr. G. C. Adkins, of Birmingham; for, according to the terms upon which it was offered, he was "successful in carrying off the greatest number of prizes in classes 1 to 48." Another year, we think, those terms should be somewhat modified; and as the object is to encourage the breed of the most serviceable kinds of poultry, it might be offered to "the winner of the greatest number of first and second prizes in Spanish, Dorking, Shanghae, Game, Turkeys, Geese, and Ducks." A smaller cup might be given upon the same terms for "Hamburghs, Polands, Silks, Rumpless, Frizzled, Guinea fowls, and Bantams."

Let us now pass on to the Exhibition Rooms, and in the first place give a few comments on the *Distinct Breeds*. We hoped to find conviction here that our first impression relative to the *Bramah Poutras* was erroneous, but the pens exhibited rather confirm us in that impression, and we still think them a mottley mixture, or mixtures with the Malay. The chickens vary from their parents, and the parents are not uniform. Mr. Rawson's widely differ from Dr. Gwynne's, and Dr. Gwynne's chickens are neither like their parents, nor like those exhibited by Mr. Sheehan. We are told that the eggs are larger, and the breasts more fleshy than those of the Shanghae, which Dr. Gwynne's much resemble. If these characteristics are inherited, then so far the breed is an improvement.

The greatest novelty here were the *Ptarmigan*, or *Grouse-footed Polands*, exhibited by Dr. Burney. The old birds are almost as small as Dumpies; white, with slightly yellowed hackle, white top-knots, and remarkably short slightly-feathered or booted legs. The combs are cupped, and the cocks tail well sickled. The chickens exhibited of this

breed were eminently attractive. They were of the purest dead white, light, and sylphid in form, remarkably deeply vulture-hooked, and booted. They were very rapid and gliding in their movements, and very timid, we should think from being frequently hunted up to shew themselves, for the parents are sufficiently sedate. Dr. Burney informs us that they do not care for corn and the usual food of chickens, but prefer ant's eggs, and the insect food of a pasture. They were imported by a relative of Dr. Burney, but at present he cannot state from whence.

The *Algerian Silk Fowls* have a dull brownish-yellow plumage, very much resembling the under fur of a hare. They are single combed, with neck hackle grizzled with black, and are almost tailless.

The *Chamois Polands* are the same as the Yellow Spangled.

The *Jerusalem Fowls* seem to be a cross between the Malay and the Silver-pencilled Hamburg; and the *Russian* look like a bearded cross between a Malay and Lemon-coloured Shanghae. Though bearded, they have no top-knots.

The *White Polands with black top-knots* are only an approach to that much-coveted variety; the top-knot and hackle being faintly laced with black.

The *Silk Shanghae Hen*, or, as it is now called, the *Emu* fowl, which we described when exhibited at Farningham, was also here, and some chickens bred from her by a Shanghae cock. They were in no respect different from buff Shanghae chickens, with black hackle and feathered legs.

We made some notes upon the crosses between various of the old varieties, which we shall place before our readers at another opportunity.

The *Spanish* classes were the best we ever saw gathered together in one arena. Captain Hornby, most deservedly, as usual, carried off the first and second prizes. The birds, however, were not in such fine condition as we have seen them, which is not a matter for surprise, when we remember the nearness of moulting, the badness of the weather, and their recent exhibition in an open shed at Gloucester. We must observe, that in pen 26, belonging to Mr. Jones, the cock was highly excellent in form and other points, but was very out of condition. The Spanish chickens were not pre-eminently good, but we must except the cockerel in Captain Hornby's prize pen. It is a most promising bird, and the white face is developing unusually early and well.

The *Dorkings* were all eminently good. Captain Hornby here, also, took the first and second prizes. His birds had a breadth and size unapproached by their competitors. The cock in Mr. Parker's pen, which took the third prize, was a very stylish bird, but the whole were below the other two pens both in size and substance. The Dorking chickens were all good, and some were as large as the full-grown fowls in some of the pens of old birds. The *White Dorkings* were as good as they usually are now, but we feel assured that they are much degenerated in size from what they possessed in former years. They seem to want fresh blood; and who can answer the rejoinder, Where is it to come from?

With the exception of the three prize pens, the full-grown *light-coloured Shanghaes* were below an average in merit and number, which might be on account of the earliness of the moulting season. In chickens of the light varieties there were no less than 136 pens; and either we are become more fastidious, or the whole of them were far from very superior. In the darker varieties, and among the White, there were some very superior birds—indeed, Mrs. Herbert's and Mr. Peter's White chickens were the best we have ever seen. It must have somewhat puzzled the judges to decide which should be first.

Game fowls were very few in number, but there were some very good birds among them. Mr. Buckley's prize chickens, though not uniform, were as good as any we ever saw. The chickens which Mr. Adkins put the highest value on took only the third prize, whilst his lower-priced birds obtained the second. He will not be surprised at this, when he notices what a bad mixture there is in the colour of the former's plumage.

The *Hamburgs*, as a whole, were inferior, with the exception of the *Golden-spangled*. The birds which took the first prize belonged to Mr. Adkins, and were eminently rich in their colour and markings.

The *Polands* were good in all the classes; and we would observe, as bearing upon a recent controversy, that in every instance of which we took a note the prizes were awarded to bearded specimens. We venture to observe that, when the judges awarded the third prize to Pen 1, in Class 38, they must have overlooked the total want of uniformity of colour in their beards. We never saw Black Polands in much worse condition.

In *Bantams*, could we have seen correctly that the combs of the hens in Pen 42 had been trimmed? Pens 33 and 35, *White Bantams*, belonging to the Rev. G. F. Hodson and Mr. Moncey, were very good.

Geese and *Ducks* were also very good; but *Turkeys* were few, and not first-rate.

The total number of pens occupied by the different varieties was as follows:—

48 Spanish.	51 Bantams.
98 Dorking.	62 Distinct Breeds.
355 Shanghae.	12 Geese.
33 Malay.	46 Ducks.
32 Game.	4 Turkeys.
103 Hamburgs.	8 Guinea Fowl.
47 Polands.	154 Pigeons.

Altogether, amounting to 1053 pens.

The judges were Edward Hewitt, Esq., Eden Cottage, Sparbrook, Birmingham; William Symonds, Esq., Rodwell, Weymouth; and Mr. John Baily, Mount Street, Grosvenor Square. The prizes they awarded were as follows:—

Class I.—SPANISH. (Cock and two Hens.)

10. First prize, Captain W. W. Hornby, R.N., Knowsley, Prescott.
9. Second prize, Captain W. W. Hornby, R.N., Knowsley, Prescott.
2. Third prize, T. H. Fox, 44, Skinner-street, Snow-hill.

Class II.—SPANISH. (Cock and three Pullets, Chickens of 1853.)

4. First prize, Captain W. W. Hornby, R.N., Knowsley, Prescott.
6. Second prize, Edward Owen, High-street, Shadwell. 7. Third prize, Edward Owen, High-street, Shadwell.

Class III.—SPANISH. (Cock and one Pullet, Chickens of 1853.)

4. First prize, J. G. Ramsden, Ivy Lodge, Twickenham. 9. Second prize, James Buckley, Llanelly, Carmarthenshire.

Class IV.—DORKING—COLOURED. (Cock and two Hens.)

12. First prize, Captain W. W. Hornby, Knowsley, Prescott. 13. Second prize, Captain W. W. Hornby, Knowsley, Prescott. 29. Third prize, Mrs. T. T. Parker, Astley Hall, Chorley, Lancashire.

Class V.—DORKING—COLOURED. (Cock and three Pullets, Chickens of 1853.)

17. First prize, Rev. James Boys, Biddenden. 8. Second prize, Capt. W. W. Hornby, Knowsley Cottage, Prescott. 9. Third prize, Captain W. W. Hornby, Knowsley Cottage, Prescott.

Class VI.—DORKING. (Cock and one Pullet, Chickens of 1853.)

4. First prize, Captain W. W. Hornby, R.N., Knowsley Cottage, Prescott. 21. Second prize, Mrs. T. T. Parker, Astley-hall, Chorley.

Class VII.—DORKING—WHITE. (Cock and two Hens.)

6. First prize, Joseph Jennens, Moseley, Birmingham. 1. Second prize, Mrs. Mills, Bisterne, Ringwood, Hants. 3. Third prize, John Fairlie, Cheveley Park, Newmarket.

Class VIII.—DORKING (Cock and three Pullets, Chickens of 1853.)

7. First prize, Nathaniel Antell, Portsea, Hants. 10. Second prize, Mrs. Ann Wilcox, Nailsea Court, Bristol. 3. Third prize, John Fairlie, Cheveley Park, Newmarket.

Class IX.—COCHIN-CHINA—CINNAMON, BUFF, or LEMON. (Cock and two Hens.)

43. First prize, T. H. Potts, Kingswood Lodge, Croydon. 40. Second prize, Lord Berwick, Cronkhill, Shrewsbury. 38. Third prize, Charles Punchard, Blunt's Hall, Haverhill.
(This class not meritorious.)

Class X.—COCHIN-CHINA—CINNAMON, BUFF, or LEMON. (Cock and three Pullets.)

56. First prize, Edward Terry, Aylesbury. 90. Second prize, H. M. Sparham, Brigadier-hill, Enfield. 126. Third prize, Henry Gilbert, 47, Upper Phillimore-place, Kensington.

Class XI.—COCHIN-CHINA—BROWN, PARTRIDGE, or GROUSE. (Cock and two Hens.)

6. First prize, C. Punchard, Blunt's Hall, Haverhill. 1. Second prize, John Fairlie, Cheveley Park, Newmarket.

Class XII.—COCHIN-CHINA—BROWN, PARTRIDGE, or GROUSE. (Cock and three Pullets, Chickens of 1853.)

11. First prize, W. B. Mapplebeck, Bull-ring, Birmingham. 19. Second prize, Charles Punchard, Blunt's Hall, Haverhill.

Class XIII.—COCHIN-CHINA—CINNAMON, BUFF, LEMON, BROWN, PARTRIDGE or GROUSE. (Cock and one Pullet.)

59. First prize, John Harrison, jun., Snelston Hall, Ashbourne. 67. Second prize, Charles Punchard, Blunt's Hall, Haverhill.

Class XIV.—COCHIN-CHINA—WHITE. (Cock and two Hens.)
6. First prize, G. C. Peters, near Moseley, Birmingham. 8. Second prize, Benjamin Holmes, 112, Hew-street, Birmingham.

Class XV.—COCHIN-CHINA—WHITE. (Cock and three Pullets, Chickens of 1853.)

13. First prize, Mrs. Edmund Herbert, Powick, Worcestershire. 17. Second prize, G. C. Peters, Moseley, near Birmingham. 8. Third prize, E. H. L. Meston, Great Yarmouth.

Class XVI.—COCHIN-CHINA—BLACK. (Cock and two Hens.)

15. First prize, Henry Parker, Church-lane, Hansworth. 2. Second prize, Jacob Crawler, Isleworth. 5. Third prize, G. C. Adkins, Edgbaston, Birmingham.

Class XVII.—COCHIN-CHINA—BLACK. (Cock and one Pullet, Chickens of 1853.)

5. First prize, Rev. George Calvert, Reeby, near Leicester. 12. Second prize, C. J. Braine, Abbotsley, Newton Abbot.

Class XVIII.—MALAY. (Cock and two Hens.)

14. First prize, Manstone and Goodman, High-street, Tottenham. 10. Second prize, Cyrus Clark, Street, near Glastonbury. 9. Third prize, Charles Ballance, 5, Mount-terrace, Taunton.

Class XIX.—MALAY. (Cock and three Pullets, Chickens of 1853.)

2. First prize, James Leighton, 183, High-street, Cheltenham. 3. Second prize, W. W. Hayne, Sutton, Surrey.

Class XX.—GAME FOWLS—WHITE and PILES. (Cock and two Hens.)

1. First prize, Edward Farmer, Great Sparkbrook, Birmingham. 3. Second prize, J. R. Rodbard, Aldwick Court, Wrington. 5. Third prize, R. W. Wilson, Stamford-le-Hope, Romford, Essex.

Class XXI.—GAME FOWLS—WHITE and PILES. (Cock and three Pullets, Chickens of 1853.)

1. First prize, John Buckley, Desford, Leicester.

Class XXII.—GAME FOWLS—BLACK-BREASTED and other REDS. (Cock and two Hens.)

2. First prize, G. C. Adkins, Edgbaston, Birmingham. 9. Second prize, F. Powell, Hillingdon, near Uxbridge. 5. Third prize, Captain W. W. Hornby, R.N., Knowsley Cottage, Prescott.

Class XXIII.—GAME FOWLS, BLACK-BREASTED, and other REDS. (Cock and three Pullets, Chickens of 1853.)

3. First prize, John Buckley, Desford, Leicester. 4. Second prize, R. W. Wilson, Stamford-le-Hope, Romford, Essex.

Class XXV.—GAME FOWLS—BLACK and BRASSY-WINGED, except GREYS. (Cock and three Pullets, Chickens of 1853.)

1. First prize, R. W. Wilson, Stamford-le-Hope, Romford, Essex.

Class XXVI.—GAME FOWLS—DUCKWINGS, and other GREYS and BLUES. (Cock and two Hens.)

7. First prize, F. H. Powell, Hillingdon, Uxbridge. 3. Second prize, E. C. Adkins, Edgbaston, Birmingham. 2. Third prize, E. C. Adkins, Edgbaston, Birmingham.

Class XXVII.—GAME FOWLS—DUCKWINGS, and other GREYS and BLUES. (Cock and three Pullets, Chickens of 1853.)

1. First prize, G. C. Adkins, Edgbaston, Birmingham. 2. Second prize, G. W. Wilson, Stamford-le-Hope, Romford.

Class XXVIII.—GOLDEN-PENCILLED HAMBURGH. (Cock and two Hens.)

4. First prize, C. Edwards, Brislington, Bristol. 14. Second prize, W. Page, Sutton-within, near Dartford. 13. Third prize, C. J. Mold, Wingfield Park, Belper.

Class XXIX.—GOLDEN-PENCILLED HAMBURGH. (Cock and three Pullets, Chickens of 1853.)

8. First prize, J. B. Chune, Coalbrookdale, Shropshire. 6. Second prize, W. B. Mapplebeck, Bull-ring, Birmingham. 5. Third prize, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk.

Class XXX.—SILVER-PENCILLED HAMBURGH. (Cock and two Hens.)

15. First prize, Mrs. Mills, Bisterne, Ringwood, Hants. 6. Second prize, G. C. Adkins, Edgbaston, Birmingham. 25. Third prize, Hon. Mrs. Astley, Swanton-house, Thetford.

Class XXXI.—SILVER-PENCILLED HAMBURGH. (Cock and three Pullets, Chickens of 1853.)

12. First prize, Miss Rachel Walker, Clipstone Rectory, Northampton. 3. Second prize, G. C. Adkins, Edgbaston, Birmingham. 15. Third prize, Mrs. Helen Ker Seymer, Hanford, Blandford.

Class XXXII.—GOLDEN-SPANGLED HAMBURGH. (Cock and two Hens.)

2. First prize, G. C. Adkins, Edgbaston, Birmingham. 6. Second prize, Joseph Jorden, Waterfall-cottage, Birmingham. 3. Third prize, G. C. Adkins, Edgbaston, near Birmingham.

[This class meritorious.]

Class XXXIII.—GOLDEN-SPANGLED HAMBURGH. (Cock and three Pullets, Chickens of 1853.)

5. Second prize, T. P. Edwards, Lyndhurst.

Class XXXIV.—SILVER-SPANGLED HAMBURGH. (Cock and two Hens.)

11. First prize, Joseph Jennens, Moseley, Birmingham. 14. Second prize, Thomas MacCann, Graham-house, Malvern. 7. Third prize, G. C. Adkins, Edgbaston, Birmingham.

Class XXXV.—SILVER-SPANGLED HAMBURGH. (Cock and three Pullets, Chickens of 1853.)

9. First prize, R. S. Thomson, 1, Adelaide-terrace, Windsor. 5. Second prize, G. C. Adkins, Edgbaston, Birmingham. 3. Third prize, John Fairlie, Cheveley-park, Newmarket.

[This class meritorious.]

Class XXXVI.—BLACK POLAND WITH WHITE CRESTS. (Cock and two Hens.)

5. First prize, G. C. Adkins, Edgbaston, Birmingham. 9. Second prize, A. Balls, Nazing, Essex. 15. Third prize, Mrs. G. C. Peters, Moseley, Birmingham.

Class XXXVII.—BLACK POLAND WITH WHITE CRESTS. (Cock and three Pullets, Chickens of 1853.)

3. First prize, G. C. Adkins, Edgbaston, Birmingham. 1. Second prize, C. Rawson, Walton-on-Thames.

Class XXXVIII.—GOLDEN POLANDS. (Cock and two Hens.)

5. First prize, W. G. Vivian, Singleton. 4. Second prize, W. G. Vivian, Singleton. 1. Third prize, C. Rawson, The Hurst, Walton-on-Thames.

Class XXXIX.—GOLDEN POLANDS. (Cock and three Pullets, Chickens of 1853.)

3. Third prize, W. B. Mapplebeck, Bull-ring, Birmingham.

Class XL. SILVER POLANDS. (Cock and two Hens.)

1. First prize, C. Rawson, Walton-on-Thames. 4. Second prize, G. C. Adkins, Edgbaston, Birmingham. 8. Third prize, Thomas H. Potts, Kingswood Lodge, Croydon.

Class XLI.—SILVER POLANDS. (Cock and three Pullets, Chickens of 1853.)

5. First prize, T. H. Potts, Kingswood Lodge, Croydon. 2. Second prize, C. Edwards, Brislington, Bristol. 6. Third prize, T. H. Potts, Kingswood Lodge, Croydon.

Class XLII.—BANTAMS, GOLD LACED. (Cock and two Hens.)

1. First prize, C. Rawson, Walton-on-Thames. 2. Second prize, C. Rawson, Walton-on-Thames.

Class XLII.—BANTAMS, SILVER LACED.

19. First prize, Frank Redmond, Swiss Cottage, St. John's-wood. 17. Second prize, James Bissell, Sparkbrook, Birmingham.

Class XLII.—BANTAMS, WHITE. (Cock and two Hens.)

33. First prize, Rev. G. F. Hodson, Chew Magna. 35. First prize, James Moncey, Norwich.

Class XLII.—BANTAMS, BLACK. (Cock and two Hens.)

42. First prize, George Jackson, jun., Hitchen, Herts. 37. Second prize, John Fairlie, Cheveley-park, Newmarket.

Class XLII.—BANTAMS, BLACK-BREASTED RED. (Cock and two Hens.)

49. First prize, John Fairlie, Cheveley-park, Newmarket. 47. Second prize, T. H. Fox, 44, Skinner-street, Snow-hill. 51. Second prize, Joseph Dutton, Bury St. Edmunds.

Class XLIII.—DISTINCT BREED. (Old Birds.)

18. First prize, John Franklin, Bexley Heath, Kent. (Emu hen.) 41. First prize, T. H. Potts, Kingswood Lodge, Croydon. (White Poland.) 6. First prize, John Fairlie, Cheveley Park, Newmarket. (Chamois Poland Fowl.) 2. Second prize, Dr. Burney, Brockhurst Lodge, Gosport. (Ptarmigan or Grouse-footed Poland Fowls.) 3. Second prize, C. Rawson, Walton-on-Thames. (Algerian Silk Fowl.) 4. Second prize, John Fairlie, Cheveley Park, Newmarket. (Dumplings.) 9. Second prize, G. C. Adkins, Edgbaston, Birmingham. (China Silk Fowl.) 16. Second prize, W. G. Vivian, Singleton. (Frizzle Fowls.) 17. Second prize, John Buckley, Desford, Leicester. (Rumpkin Fowls.) 28. Second prize, A. Williams, Reading. (Blue Polands.) 37. Second prize, T. Lyne, Malmsbury. (Booted Bantams.)

Class XLIV.—DISTINCT BREED. (Chickens.)

2. First prize, Dr. Burney, Brockhurst Lodge, Gosport. (Ptarmigan, or Grouse-footed Poland Fowl.) 6. First prize, W. G. Vivian, Singleton. (White Poland.) 7. Second prize, W. G. Vivian, Singleton. (White Poland.) 8. Second prize, W. G. Vivian, Singleton. (Normandy.) 11. Second prize, Isaac Jecks, Trowse, Norwich. (China Silk Chickens.) 15. Second prize, W. C. Gwynne, M.D., Sandbach. (Bramah Pootra.)

Class XLV.—GEESE. (Gander and two Geese.)

8. First prize, Austin Williams, 8, Broad-street, Reading. 6. Second prize, W. G. K. Breavington, Vicarage Farm, Sutton, Hounslow.

Class XLVI.—DUCKS. (Drake and 2 Ducks.)

19. First prize, W. G. K. Breavington, Sutton, Hounslow. (White Aylesbury.) 34. First prize, B. Heywood, Brooksbank, Tickhill. (Rouen.) 42. First prize, John Fairlie, Cheveley-park, Newmarket. (Muscovy.) 43. First prize, John Fairlie, Cheveley-park, Newmarket. (Black Bombay.) 29. Second prize, Mrs. Ann Wilcox, Nailsea-court. (White Aylesbury.) 35. Second prize, Captain W. W. Hornby, Knowsley. (Rouen.) 41. Second prize, John Fairlie, Cheveley-park, Newmarket. (Muscovy.) 45. Second prize, W. Horton, Birmingham. (Labrador.)

Class XLVII.—TUKKEYS. (Cock and two Hens.)

2. First prize, John Fairlie, Cheveley-park, Newmarket. 4. Second prize, John Rodbard, Aldwick-court, Wrington.

Class XLVIII.—GUINEA FOWL.

4. First prize, W. G. Vivian, Singleton. Second prize, John Rodbard, Wrington, Bristol.

The **SILVER CHAMPION CUP**, value £15, was awarded to Mr. G. C. Adkins, Edgbaston, near Birmingham.

The **DEALERS' PRIZE**, of £5 5s., was awarded to Mr. P. Castang, of Leadenhall Market.

PIGEONS.

Judges: 'Mr. DEAN, of Wolstenholme; assisted by Mr. J. M. EATON.

1. Red Pouter—G. C. Adkins. 121. Blue Pouter—A. Balls. 3. Black Pouter—Edward Farmer. 122. Yellow Pouter—A. Balls. 13. Black Carriers—A. Balls. 18. Dun Carriers—A. Balls. 17. Blue Carriers—A. Balls. 11. Black Dragons—Edward Farmer. 22. Blue Dragons—A. Balls. 25. Yellow Dragons—A. Balls. 28. White Dragons—W. Woods. 27. Yellow Mottle—W. Woods. 40. Almond Tumblers—Jones Percivall. 34. Almond Tumblers (2nd prize)—A. Balls. 42. Short-faced Mottles—J. Percivall. 41. Red-faced Mottles—A. Balls. 43. Short-faced, Beards Black, Mottles—A. Balls. 44. Short-faced, Beards Blue, Mottles—A. Balls. 45. Short-faced, Beards Red, Mottles—A. Balls. 47. Short-faced, Beards Yellow, Mottles—A. Balls. 49. Short-faced Tumblers, Red—G. C. Adkins. 52. Jacobins, Red—C. Rawson. 53. Jacobins, Yellow—G. C. Adkins. 61. Owls, Silver—W. H. Goddard. 62. Owls, Blue—G. C. Adkins. 64. Owls, Yellow—G. C. Adkins. 70. Nuns, Black—G. C. Adkins. 73. Turbits, Yellow—G. C. Adkins. 76. Turbits, Red—C. Rawson. 82. Fantails, Black—G. C. Adkins. 85. Fantails, White—C. Rawson. 90. Fantails, Blue—G. C. Adkins. 92. Barbies, Yellow—C. Rawson. 94. Barbies, Red—A. Balls. 95. Barbies, White—A. Balls. 97. Barbies, Black—A. Balls. 101. Magpies, Black—C. Rawson. 106. Trumpeters—J. B. Chunc. 111. Runts, Spanish—C. Rawson. 119. Runts, Leghorn—G. C. Adkins. 124. Good Feathered Flying Baldheads—W. R. Rose. 125. Good Feathered Flying Baldheads, Red—G. C. Adkins. 126. Good Feathered Flying Baldheads, Blue—W. Woods. 127. Good Feathered Flying Baldheads, Black—G. C. Adkins. 133. Feathered Flying Beards, Black—A. Balls. 134. Feathered Flying Beards, Blue—A. Balls. 135. Feathered Flying Beards, Red—A. Balls. 139. Feathered Flying Motts, Red—W. Woods. 140. Feathered Flying Motts, Yellow—W. Woods. 144. Australian Crested—G. C. Adkins. 145. Australian Bronze Wing Crested—G. C. Adkins. 146. Australian Passenger—G. C. Adkins. 151. Porcelain—J. B. Chunc. 152. Archangels—John Bailey, jun. 153. Brunswickers—John Bailey, jun.

ZINGARI POULTRY SHOW, IN YORK.

THE first show of poultry in this city, under the auspices of the members of what is called the "Zingari Society," was held on July 21st. For the purposes of explanation, it is perhaps necessary to state that the members of the Zingari Society have been in the habit, for the last few years, of meeting annually for a short period, for the purposes of recreation. Their head-quarters have been at their Gardens near the York County Hospital, in Monkgate, and it speaks well for the exertions of those to whom has been entrusted the responsibility of making arrangements for, and obtaining subscribers to, this show, that only about a month or five weeks have elapsed since the idea was suggested of holding the exhibition. There never has been in York before a show of poultry to any considerable extent, notwithstanding the attention which has been directed to the subject, and therefore when it was determined to have a show, to promote the improvement of the breed of poultry, it was never thought that it would be on any very extensive scale. The result, however, has proved what can be effected by properly directed and zealous efforts, and the show was of such a character as surpassed any previous one we have ever seen, and exceeded, we may also observe, the most sanguine anticipations of its promoters. In the first instance, a spirited working committee was appointed, which was assisted by an able and industrious secretary, Mr. Henry Preston, upon whom has devolved a large amount of labour and anxiety, which can be best appreciated by the persons who were present at the show. The object was, to bring together the best poultry that could be exhibited from the neighbourhood of York, the schedule of prizes being sufficient to allow every person who had a good bird of any of the breeds mentioned, to exhibit it in any class that was suited for it, the prizes offered amounting in the whole to nearly £20.

The site chosen for the exhibition was a field conveniently and pleasantly situated adjoining the Zingari Gardens. It is commodious and well adapted for such a purpose, and the arrangements made were such as to reflect the highest credit upon the committee for their taste and judgment. To a person entering the field they presented a novel yet pleasing and neat appearance, and we may, without hesitation, affirm that a similar design has not anywhere else been seen. The pens extended continuously round the field, forming a circle of fifty yards diameter. Their number amounted to 164. They were each three feet long, two feet ten inches high, and the same in depth, and as there were about 250 entries,

space in the centre had to be devoted to a portion of the poultry exhibited. The show was open from shortly after eleven o'clock until six in the evening.

The judges were the Hon. and Rev. S. W. Lawley, E. Bond, Esq., and T. H. Travis, Esq., names which form a sufficient guarantee for the impartiality of the decisions arrived at, and gentlemen well qualified to perform the duties of such an office. They awarded the following

PRIZES.

COCHIN-CHINA. Cock and Hen. (Buff or Yellow.)

First prize, Mr. Braddock, York. Second prize, Mr. Woodhouse, York. Third prize, Rev. G. Hustler, Appleton. Eight entries.

COCHIN-CHINA. Cock and Hen. (Cinnamon or Pencilled light or dark.)

First prize, Rev. G. Hustler, Appleton. Seven entries.

COCHIN-CHINA. Cock and Hen. (White.)

First prize, S. C. Floyd, Esq., Sands, Holmfrith. Second prize, Mr. Braddock, York. Six entries.

COCHIN-CHINA. Cock and Hen. (Any colour or mixed colour.)

First prize, Miss Thompson, Fairfield. Second prize, Mr. G. Snow, York. Seven entries.

COCHIN-CHINA. Cock of any age. (Buff or Yellow.)

First prize, T. B. Stead, Esq., Leeds. Second prize, Mr. G. Bumby, Acomb. Five entries.

COCHIN-CHINA. Hen of any age. (Buff or Yellow.)

First prize, Mr. G. Bumby, Acomb. Second prize, John Hill Smith, Esq. Six entries.

COCHIN-CHINA. Cock. (Any colour.)

First prize, John Hill Smith, Esq. Second prize, Miss H. C. Preston, Bulmer. Six entries.

COCHIN-CHINA. Chickens. (Buff or Yellow.)

First prize, Mr. Woodhouse, York. Thirteen entries.

COCHIN-CHINA. Cock and two Pullets. (Cinnamon or Pencilled light or dark.)

First prize, Mr. G. Snow, York. Second prize, Miss E. Tuke, York. Six entries.

COCHIN-CHINA. Cockerell. (Buff or Yellow.)

First prize, John Hill Smith, Esq., Skelton. Second prize, Mr. J. Braddock, York.

COCHIN-CHINA. Pullet. (Buff or Yellow.)

First prize, Mr. Braddock, York. Second prize, C. S. Floyd, Esq. Twelve entries.

COCHIN-CHINA. Cockerell. (Cinnamon or Pencilled.)

First prize, Mr. Braddock, York. Second prize, Mr. W. Green, Bolton Percy. Ten entries.

COCHIN-CHINA. Chickens under ten weeks old. (Buff or Yellow.)

First prize, Mr. G. Bumby, Acomb. Second prize, Mr. G. Jackson, York. Highly commended, Rev. W. Parsons, Midgc Hall. Fifteen entries.

COCHIN-CHINA. Three Chickens. (Cinnamon or Pencilled light or dark.)

First prize, Mr. G. Bumby, Acomb. Second prize, Rev. G. Hustler, Appleton. Six entries.

COCHIN-CHINA. Clutch of Chickens, with Hen.

First and Third prizes, Mr. G. Bumby, Acomb. Second prize, Mr. J. Braddock, York. Six entries.

SPANISH. Cock and Hen.

Second prize, Mrs. Garforth, Wigginthorpe. Second prize, C. S. Floyd, Esq., Sands Holmfrith. No first prize. Eight entries.

SPANISH. Three Chickens.

First prize, T. B. Stead, Esq., Leeds. Second prize, Jas. Pratt, Esq., York. Three entries.

DORKING. Cock and Hen.

First prize, T. B. Stead, Esq. Second prize, Rev. W. W. Parsons, Midgc Hill, Mossley. Nine entries.

DORKING. Three Chickens.

First prize, T. B. Stead, Esq. No second prize. Four entries.

GAME. Cock and Hen.

First prize, Mr. J. Nicholson, York. Second prize, T. C. Constable, Esq., Burton Constable. Seven entries.

MALAY. Cock and Hen.

First prize, Mr. G. Jackson, York. One entry.

POLAND. Cock and Hen.

Second prize, T. C. Constable, Esq. No first prize. Three entries.

PHEASANTS. Cock and Hen. (Gold.)

First prize, Mr. Taylor, Groves. Second prize, Mr. George Snow, York. Commended, Mr. Robinson, York. Seven entries.

BANTAMS. Cock and Hen. (Black.)

First prize, Mr. Braddock. Second prize, Mr. Jackson. Two entries.

BANTAMS. Cock and Hen. (Gold-laced.)

Second prize, T. C. Constable, Esq. No first prize. Fourteen entries.

DUCKS. (Muscovy.)

First prize, Ed. Allen, Esq., York. One entry.

DUCKS. (Aylesbury.)

First prize, Ed. Allen, Esq. Second prize, Mr. G. Jackson. Four entries.

DUCKS. (Rouen.)

First prize, Mr. G. Jackson. Three entries.

SEA WEEDS.—No. 5.

(Continued from page 230.)

ORDER 2.—SPOROCHNACEÆ.

“OLIVE-COLOURED, inarticulate Sea Weeds, whose spores are attached to external, jointed filaments, which are either free or compacted together into knob-like masses.”

“A small group,” says Dr. Harvey, “containing five genera, comprising twenty-four species.”

It is a curious fact that they destroy other *Algae*.

DESMARESTIA.

Name in honour of A. G. Desmarest, a celebrated French naturalist.

1. *DESMARESTIA LIGULATA* (Strap-shaped).—“Generally in deep water; frequent on the southern shores of England and south and west of Ireland. The frond is from two to six feet long; substance at first cartilaginous, becoming flaccid when exposed to the air; colour, when growing, olive-brown, becoming green in the air. The fructification is unknown.”

2. *D. VIRIDIS* (Green).—“In the sea, on stones, and the larger *Algae*. Not uncommon. The whole plant has a feathery and delicate appearance.”

3. *D. ACULEATA* (Pointed).—“Stem short, throwing forth numerous slender branches, which are repeatedly irregularly pinnate.” When young the branches are fringed with fine green filaments; these after a time fall off, and are succeeded by stiff spines, so that it looks like another plant. In its young state it presents a beautiful object in the water. If other *Algae* are put into a bason of water with the *Sporochnoideæ* they change colour and decompose. (The cut at page 230, is of *D. aculeata*.)

ARTHROCLADIA.

“Frond thread-like, cellular, with an articulated tubular axis, nodose; the nodes producing whorls of delicate-jointed filaments. Fructification, pedicellate moniliform pods, borne on the filaments, and containing, at maturity, a string of elliptic spores. Name, from two words signifying a joint and a branch.”

ARTHROCLADIA VILLOSA (Hairy).—“Rather rare; summer and autumn. It is an elegant weed, slender and graceful, having several fronds from the same base; six inches to nearly three feet long. Mr. Hassall, who discovered it in Scotland, observed, that fresh specimens, when spread upon paper, rendered it transparent, as if it had been touched with oil. It adheres well to paper, and, when gracefully arranged, makes an elegant specimen for the herbarium; one which was sent to me from Devonshire looks like a Weeping Willow.”

SPOROCHUUS.

“Frond filiform, cellular. Fructification, lateral-crested, stalked receptacles. Name, from a seed and wool, because tufts of fibres accompany the fructification.”

SPOROCHUUS PEDUNCULATUS (Flower-stalked).—On rocks in deep water; rare; annual; summer and autumn. A beautiful and curious-looking weed, with its light and graceful branches.

CARPOMITRA.

“Frond linear, dichotomous, flat-ribbed, olivaceous. Fructification, mitriform; receptacles terminating the branches, composed of horizontal branching filaments, whorled round a vertical axis, and producing elliptic oblong seeds. The name is from two Greek words signifying mitre-fruit.”

CARPOMITRA CABRERÆ.—“Thrown up from deep water; very rare. It is found not only on the south of England and Ireland, and of Spain, but it is also a native of New Zealand. It seems to be rare in all its recorded stations”—*Harvey*.

Though the British species of *Sporochneæ* are so few, and none of them common, save the *Desmarestia*, yet they make up in beauty what is wanting in numbers. The young *D. aculeata*, with its beautiful soft, green, silky fringe, is a lovely weed; and *Arthrocladia villosa*, adorned by its small “joint-like swellings and filaments of delicate green,” wins our admiration. The endless variety of the works of God is most astonishing, even as regards what is known to us; but how much is still hidden from our view, for God “Doeth great things and unsearchable; marvellous things without number.” Job v. 9.

ORDER 3.—LAMINARIACEÆ.

“Olive-coloured Sea Weeds, whose spores are superficial, either forming indefinite cloud-like patches, or covering the whole surface of the frond.”

1. ALARIA ESCULENTA (Eatable).

“Name, *ala*, a wing, from the winged base of the frond; on rocks; common in Scotland and Ireland, also in the West of England. The midrib is eaten in Ireland, Scotland, and the Faroe Islands.”

2. LAMINARIA.

LAMINARIA DIGITATA (Finger-like).—“Stem woody, cylindrical, gradually tapering, expanding into a leathery, roundish, oblong frond, deeply cleft into many linear segments. In deep water, common.” It is very striking, after a storm, to see the coast for miles strewed with these large plants; their woody stems and long tufts of shining fronds are so foreign looking. They come ashore laden with treasures for the diligent naturalist; so many of the smaller *Algae* are parasitic upon them, and especially *Delesseria alata*, whose crimson tufts must make a beautiful contrast with the dark weed which bears them when both are floating in some deep recess of ocean. Zoophytes, too, abound upon the stalks and roots of *L. digitata*. I have seen *Sertularia operculata* so clustering upon them that the original stalk was lost sight of, and the Zoophytes gave it the appearance of a brush for cleaning bottles. Shells, too, are often to be found amongst the roots. The way in which the perennial species of *Laminaria* grow is very remarkable; they yearly change their fronds. “The young frond arises at the base of the old one, and, as it enlarges, pushes it off.” The rapid growth of some of the large weeds is astonishing, and proofs of it are recorded by Dr. P. Neill, in an article on *Fuci*. A beacon was about to be erected upon the Carr Rock, in the Frith of Forth. Mr. Stephenson, Civil Engineer, made the observations for Dr. Neill, and sent specimens of the weeds to him. “The Carr Rock is at the entrance of the Frith; it is about twenty feet wide and sixty long, and it is uncovered only at the lowest ebb of spring-tide. When the operations were begun it was clothed with large Sea Weeds, especially the Great Tangle, *L. digitata*, and *Alaria esculenta*, or Badderlocks. In the course of 1813, the workmen succeeded in clearing and levelling a considerable portion of the foundation of the intended building, but in the beginning of November, operations were abandoned for the winter. At this time the rocks, by pick and axe, had been made quite bare; the Sea Weeds had been cut away, the roots trampled, and much of the rocks chiselled, so that the very stumps had been cleared away. On returning to the rock, in May, 1814, to resume operations, it was matter of no small surprise to find the rock as completely covered with large Sea Weeds as when they first landed on it, though little more than six months had elapsed since they left it quite bare. Many specimens of *Alaria esculenta* measured six feet in length; the specimens of common Tangle were about two feet in length. The specimens of both were taken from that part of the rock which had been dressed with the pick and chisel before the workmen left it in autumn, so that they had evidently grown from the seeds which must have attached themselves to the rock after the middle of November, during a winter which was one of great severity.”

2. *L. BULBOSA* (Bulbed).—On rocky shores, in deep

water. The bulb, in a specimen measured by Mrs. Griffiths, from deep water in Torbay, was a foot in diameter, and supported a frond, which, when spread out upon the ground, formed a circle of at least 12 feet in diameter."

3. *L. SACCHARINA* (Sweet).—"On rocks between tide-marks; very common."

4. *L. PHYLLITIS*.—"Growing either on stones, or the stems of other Algæ." This plant, when gathered young, makes very pretty specimens for the herbarium, adhering closely to paper.

5. *L. FASCIA*.—"Frond 4 feet 12 inches long, and from two lines to an inch in breadth; of a delicate membranous substance, and olivaceous colour."

CHORDA.

"Root scutate; frond simple, cylindrical, tubular. Its cavity divided by transverse membranous septa into separate chambers. Fructification, a stratum of obconical spores, much attenuated at the base, covering the whole external surface of the frond. The name signifies a cord."—*Harvey*.

CHORDA FILUM (Thread-like).—In the sea, on stones and rocks; very common; the length to which it grows is surprising, being some times forty feet long. Dr. P. Neill says, "In Orkney we have sailed through meadows of it in a pinnace, not without some difficulty, when the water was between three and four fathoms deep, and where the waving weed must have been from twenty to thirty feet long. This, too, was the growth of one summer, for the storms of winter completely sweep it from the bay every year."

2. *C. LOMENTARIA*.—"Rocks in the sea; common. Frouds 8—16 inches long, constricted at regular intervals into a series of bag-like articulations."—*Harvey*.

S. B.

(To be continued.)

POULTRY YARD REPORT.

IF you think the following of any use, in furtherance of your purpose in publishing the accounts of poultry keeping, I shall be glad to have sent it; you may rely upon its correctness. I have ten *Poland Hens*, hatched last August; seven of these commenced laying in December at eighteen weeks old, the others in January; and to the 30th of June they had laid, in

December	-	-	-	-	24
January	-	-	-	-	125
February	-	-	-	-	151
March	-	-	-	-	181
April	-	-	-	-	185
May	-	-	-	-	205
June	-	-	-	-	169
Total	-	-	-	-	1040

They were fed on barley and oats, ground oats and bran, with cabbage leaves and the run of grass, at a cost of £4 8s., or 1½d. per week each, for ten hens, two cocks, and six ducks, wholly confined to the yard with the fowls, from the 31st of August to the 30th of June, being forty-three weeks. I have neither set hens nor ducks, but when the hens were broody shut them up *alone* two or three days; they generally laid during the time, and continued to do so afterwards. The greatest number laid by one hen was 138 eggs in 190 days; and the fewest, 67 eggs in 154 days. They are still laying well.—J. S.

PLANT COLLECTING IN BRAZIL.

I AM quite sure that your excellent correspondent, Mr. D. Beaton, would be the last man to lead any one astray, or to take the part of the goat, in the Fable of "the Goat and Sheep at the well," so well told by Æsop; yet, reading his most attractive article on "Brazilian plants," in *THE COTTAGE GARDENER* of the 14th July, would almost tempt any one to take a trip out to Rio to see the floral wonders of that most beautiful country. Having resided there myself, I

must, in justice, give a few words of warning before any ardent Florist rushes off to secure the talked-of prizes.

The aqueduct, truly, does run from the Corcovado to Rio; but let not the innocent stranger imagine that he can stray away a few yards from it to secure some admired prize. If he did, he would soon find himself faster secured than Abram's ram in the thicket, and will be only too glad to be cut out of the wood by his companion, if he is so fortunate as to have one. I have seen a friend, who endeavoured to secure a bird that he had shot, so entangled, in trying to get through ten yards of the underwood, that he, literally, could not stir hand or foot.

Besides, the country for miles and miles, or rather leagues and leagues, about Rio, has been thoroughly pilfered by professional botanists, of whom there are plenty, both black and white, to provide the unwary stranger with *any* plant he will ask for; or something as like it as they dare tender as such! Then, again, poor Marsh, alas! is no longer in the land of the living to gladden his Rio friends with a hearty welcome, or to assist an enterprising botanist with his valuable advice and services. He has been dead some years, and his place is not what it was.

Let all your readers beware of sending orders to correspondents for cases of plants. Such a venture will not answer, as too many know already to their cost.

The Morro de Flamingo is no longer open to the botanist; for it was so plundered of its floral treasures, that the old lady to whom the estate belonged would allow no trespassers; but I fear she was only locking the stable after the steed was stolen.

Last, but not least, that deadly scourge, the yellow fever, attacks all new arrivals, and but too few return to tell the sufferings they undergo.—W. X. W.

COCHIN-CHINA COCKERELS AS NURSES.

IN last week's *COTTAGE GARDENER*, your correspondent, "A Poor Man's Well-wisher" mentions having a Cochin-China cockbird which makes a capital nurse for young chickens. He seems desirous of having a confirmation of the fact. I have two young cockerels, both of which brood chickens as well as any hen can do, and also forage about for insects for them; they are not particular as to the breed of the chickens; they are at present brooding Dorking, Chittiprat, Spanish, and Cochin chickens, from three weeks to two months old; during rainy weather the cockerels take the chicks under shelter and brood them, and will not eat themselves any food which I give them until they first see that the chickens have sufficient; when I give the cockerels any bread crumbs to eat they immediately call all the chickens, and break the large crumbs for the little chickens to eat, and will not suffer any of the hens to ill-treat any of the chickens under their care. I have had about 200 chickens this season, and find the brooding propensities of the Cochin cockerels very useful, as my hens leave their chickens too early.

PRACTICAL MAN.

THE SHARP-SHOOTER BUSH.

Urtica serpyllifolia, alias *Dasyphylla*, alias "The Burning Bush." This is the best looking, and the most harmless plant among all the Nettleworts, and yet, in some respects, it is the most formidable plant in the vegetable kingdom, or any other kingdom or state. When I was at the Oxford Botanic Garden, last autumn, I saw this little wonderful plant for the first time, and when I heard that one could learn all the manœuvres and stratagems of war from its *natural disposition*, and now being past the age at which they cease to enlist for militia service, and, also, having then not had the slightest idea of there ever being a camp at Chobham, or Cobham either, which is still nearer to me, I had but a slight chance of ever learning much about soldiering; but still, having the fear of invasion before my eyes, I thought I could do no better than ask for a cutting of the *war-like* plant from Mr. Baxter, grow it at home, and learn

from it, in secret, how to face the French, the Russians, or any of them.

Well, Mr. Baxter very kindly gave me a cutting, although he could very ill afford it, his own only plant being then not more than three inches high. I must now tell, that it is a stove plant, and looks much more like a tree Lycopod than the climber which goes by that erroneous name, and I had no stove to grow it in, nor any convenience at all for such a cutting at such a late period of an usually cutting season, so I begged very hard of Mr. Jackson to do the thing for me, and help to save London from the French, if they really should come over in the spring. Our first grand field-day was early last week, and the precision and regularity of our firing was perfectly wonderful; the earnestness of our mimie battles made my very sides ache again; I would not give a groat to see the sham fights on the Common, after seeing the thing so naturally, and so easily, and so much better, done at home by this pretty plant, which, although they call it "The Burning Bush," never burns anything whatever; all the battles end in smoke, but the firing all over the plant is as fair and steady as possible, only more in the sharp-shooter's way than they do it at the Camp.

Now, as we live in such critical and troublesome times, I shall give up my share in this war-like plant for the good of the country, and at half-price; it cannot surely come too dear from Mr. Jackson; and I engage that any of our readers, by following out the instructions herewith sent, may give a good battle on the dining table any evening during this and the next month. The plant has made a great stir lately down at Winchester; for two ladies, who called to see me from that city, told me so; but our worthy Editor was not in the contest, and there is no cause to make a fuss about it anywhere. It is quite enough to see the wonderful mechanism by which the firing is sustained so long, by means apparently so slight.

The plant has gone under several wrong names, as *Pilea muscosa*, or sugar cane weed, so troublesome to the West India planter; quite a different thing, but still a Nettlewort; and *Thelygonum Cynocrambe*, to which it is not at all like. I am assured by Mr. Baxter, who is a good authority, that the real name is *Urtica serpyphyllum*, or *serpyllifolia*. It will need the help of a stove, and is easily increased by cuttings, and is a fit associate to a collection of Lycopods, and requires the same treatment, in every respect. What causes the war-like shooting is the bursting of the pollen anthers, which are thickly set all over the plant, on the application of water after a dry day. The way that Mr. Jackson and I got up review was by plunging the plant in a tank of water, and after shaking off the wet the shooting began in right earnest, just like a company of skirmishers or sharp-shooters sent out before a regular battle. The smoke from the pop, pop, firing is seen as distinctly as on a field-day, without the noise and bustle of fighting, and altogether the proceeding is as curious and interesting as any thing that has ever been recorded from the vegetable kingdom.—D. BEATON.

SCRAPS FROM JERSEY.

Parsnips sown in December are now (July 21) being dug up for use.

Peas.—I saw the plants full three inches high on the 28th of June, sown on ground from which the New Potatoes had been dug up five or six weeks before.

Potatoes planted in November and December are dug up, when ripe, in the August following, and the ground planted with *Cabbage* of June sowing, which are cut with good hearts or heads in November and December, and the ground again planted with *Potatoes*. A good half-an-acre of ground attached to a cottage has had this cabbage and potato routine, without any variation, for the last eight years; a mixture of manures being used for the cabbages, and seaweed to the potatoes.—J. N.

PRODUCE OF A SHANGHAE HEN.

As you have lately published, in your valuable periodical, the number of eggs obtained from some Cochins or Shanghai hens, I have taken the liberty of sending you a statement of the number of eggs laid by a Cochins-China hen in my possession. She was given to me by my respected friend and minister, Juno 9th, 1853; was hatched in the spring of 1852. I beg to state that several of my neighbours are witnesses to the truth of the following statement.

	Number of Eggs.		Number of Eggs.
1853.		June 29	.... 1
June 11	.... 2	" 30	.... 1
" 12	.... 2	July 1	.... 1
" 13	.... 1	" 2	.... 2
" 14	.... 0	" 3	.... 1
" 15	.... 2	" 4	.... 2
" 16	.... 2	" 5	.... 2
" 17	.... 1	" 6	.... 1
" 18	.... 1	" 7	.... 0
" 19	.... 2	" 8	.... 1
" 20	.... 1	" 9	.... 0
" 21	.... 1	" 10	.... 2
" 22	.... 0	" 11	.... 2
" 23	.... 0	" 12	.... 1
" 24	.... 0	" 13	.... 2
Made a new nest.		" 14	.... 1 wt. 3 oz.
" 25	.... 1 weight 3 oz.	" 15	.... 0
" 26	.... 2	" 16	.... 1 wt. 3½ oz.
" 27	.... 0	" 17	.... 1 wt. 3¼ oz.
" 28	.... 1	" 18	.... 2

You will perceive that in thirty days I obtained forty-three eggs; in two instances she laid seven eggs in four days. The two eggs of June 16th weighed 4½ ozs. The hen looks as well now as she did a month ago.

Should you think the above statement of any interest to your numerous readers, I shall be most happy to send you a further account in a fortnight or three weeks.—F. D. MEARS, Birch, near Colchester.

DISEASED PEA CROP.

I VISITED a garden, this week, where the pea crops are infected by a disease of which I am very anxious to know more. They are grown in a hot sandy loam, the subsoil carbonate rock, as it is here called, strongly impregnated with iron, and no cause of disease presents itself to my mind or the gardener's, though we neither of us doubt your instant discovery. They go, when a foot high, at the very base of the stem, and continue wasting, yet growing; and finally, at their full height, with a few half-formed pods, wholly die; they are much mildewed, but the failure does not seem consequent on that, and the stem is rotten within, even above where it shows outside, while at the root, when pulled up, there are little white specks which seem like insects, but too small to determine on without a glass. The old gardener is anxious to know if it be possible it can have any connexion with the disease of the potatoes, which preceded the pea crop in the same ground. As some amends for this troublesome detail, I would inform you of an accidental discovery—that an Apple-tree, partly staked with *Laburnum*, in that part totally escaped the ravages of the blight; and that, following up this hint from nature, the whole tree was syringed with water in which laburnum bark had been steeped, and the decoction had the effect of stopping, for the time, future mischief. The bark fermented and looked like yeast in the water which stood. I should observe, in the melon frame this little history may be useful, even after your clever helper Mr. Errington's lessons of prevention are learned; for some of his eures can be applied only in winter; and if that time is lost, this plan I have detailed may be tried with a tree either in leaf or blossom.

HENRIETTA A.

[The rotting of the stems of Peas, and the mildew on their leaves, arise from the excessive wet weather. Cabbages, Lettuces, Onions, &c., are all, in one way or other, also affected with some kind of premature decomposition. The

Potato murrain is no otherwise connected with such appearances than that it is exasperated by the same weather.—
ED. C. G.]

TO CORRESPONDENTS.

** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

BLUE VERBENA (H. C.).—Can you refer us to where the Verbena, *Le Camargo*, "was so highly recommended," as we do not happen to know it. We see it in some catalogues marked as "a good blue, light eye," that means, as we take it, good blue for a Verbena; but the truth is, there is no blue Verbena at all; and you will see, to-day, in the report on Chiswick House, that *Imperatrice Josephine* is still preferred there as the best approach to the colour.

TARTS FROM UNRIPE APPLES.—At page 277 of the current volume, H., in describing things in Covent Garden Market, said "the Apples are small, half-grown, and unripe *Carlisle Codlins*, more for curiosity than use, and which will, in all probability, be purchased by some ladies who like to say, they have eaten an apple-pie. * * * Of course, if such people will buy a whistle, they have a perfect right to blow it." To this, A. R. answers,—"I think 'H.' is quite mistaken about the apple-tarts. The people who 'blow that whistle' know what they are up to, I can assure you. I got the wrinkle myself about a month ago. Take the apples when the trees are thinned, cut off the stalk and eye, but do not peel them; stew them *well*, till soft, then put them into a dish and bake, as for an ordinary tart. They are getting rather old now, and may require peeling. Perhaps you will tell 'H.' to try *that whistle*, and I do not think he will pay too dear for it."

BULBS (A. R.).—The bulb list is only interrupted by more urgent and more generally useful matter. Mr. Beaton will continue it, at every favourable opportunity, down to *Zephyranthes*, and lower still, if we meet with suitable bulbs.

DIELYTRA SPECTABILIS (*Ibid*).—Our correspondent has a plant of this "nearly, or quite, four feet high, and three feet across, with some seed pods on," and he is, probably, quite right in considering that "this may be all the culture it requires to seed it." Many of our new plants are kept from seeding by over excitement in propagating them for the first few years. Others do not seed, because *something* is wanted that is natural to them in a wild state; the want of that something, however, is sometimes overcome, as when the species happens to seed, and is reproduced under cultivation. Whether your surmise be right, or otherwise, take care of all this seed, and the plants reared from them, as in all probability some of them may seed freely under all circumstances, and some may be easily crossed, although no outward sign of difference from the old parent may be seen in any of them.

AYLESBURY DUCKS (F. I. B., *Exeter*).—The bill of the Aylesbury Duck should be of a pale flesh colour; and on this point, as a characteristic of the breed, judges have universally and wisely laid great stress. In conjunction with this, weight and figure,—the latter, including a wide breast and back, with orange-red legs and feet, would carry the day.—W.

PURE BREEDING OF FOWLS (*Ibid*).—We do not believe that "a separation of five or six weeks, after fowls of different breeds have been permitted to run together," would "secure" the purity of their progeny. In the case of a pullet, it has been argued, that the first impression may be permanent; and, although unconvinced by any facts as to this being really the case, we are yet strongly of opinion, that eight or ten weeks, at least, should intervene between the periods of promiscuous intercourse and the selection of eggs for hatching. Whenever practicable, we should always wish to keep the separate races apart from each other.—W.

SPANISH FOWLS (*Ibid*).—"First-rate Spanish chickens, at £5 5s. each," is very cheap, according to the present market value of such birds as would answer your description of excellence. Birds of inferior grades of merit are procurable at a much lower figure; but when speaking of "first-rate birds," hundreds, and probably thousands, would find a ready sale at the price you mention.—W.

EARLY AND LATE GRAPES (I. N. Campbell).—For an *early* house, take four *Hambros*, two *Muscadines*, and one *Sweet-water*. For a *late* house—three *West's St. Peters*, two *Muscats of Alexandria*, and one *Hambro*, and one *Barbarossa*. It is not material whether you plant under the rafter; the latter is the ordinary plan. As the season is so far advanced, we advise you to plant next March.

WORK ON POULTRY (W. W. H.).—Richardson's *Domestic Fowl*, if cheapness is your chief consideration; otherwise, "The Poultry Book."

CALCEOLARIAS, &c. (A Young Gardener).—All those you mention require no more than the usual culture of Calceolarias. This is given in our seventh volume. You may make cuttings of *Tom Thumb* Geranium now. The best time for sitting *Shanghae* hens is March.

WORMS IN FLOWER BOX (M. Y. C.).—Water the soil with lime-water, and remove the worms as it drives them out.

SILVER-PENCILLED HAMBURGH (Z. Y.).—The tail of the cock should be black.

RASPBERRY SEEDLING (J. Keighley).—The berries were so mashed that we could form no judgment upon them. They are not above the average size.

TENANT AND HIS PLANTS (Twig).—If your Landlord claims all that the law gives him, you cannot remove your Roses, nor any other shrubs, plants, or trees, unless there was either a covenant in your lease permitting you to do so, or unless you are a dealer in plants.

TAKING UP POTATOES (J. R. — *Everton*).—Fork them up as soon as the haulm is dead, or nearly so. Select dry weather for the operation, and store them in a dry shed, in layers, alternating with coal ashes, sand, or earth.

FRUIT OF CYDONIA JAPONICA (J. C.).—This sometimes weighs five ounces and more. It is said to make a preserve more spirited and superior in flavour to that made from Quinces. It may be preserved precisely as they are, only requiring a little longer stewing. This shrub is better known as the *Pyrus japonica*.

YOLKLESS EGGS (G. H. W.).—The occurrence of eggs without yolks, in your Bantam Hen, proves that the ovary is not in action, and that the eggs are the formation of the egg-passage only. As the hen is not described as being ill, I should recommend trying the effect of a total change of diet; scalded rice would, most probably, put a stop to the laying, if given for three or four days; and when the hen resumes laying the eggs will most likely be natural; if they should not, give half-a-grain of calomel and one-twentieth-of-a-grain of tartar emetic.—W. B. TEGETMEIER.

LOUNON'S HORTUS BRITANNICUS (A Constant Reader).—There have been four supplements, but the last, in 1850, embodies all of them.

GOLD FISH.—G. W. would be obliged by information relative to the proper management of Gold Fish.


COD-LIVER OIL FOR FOWLS (L. A.).—A large teaspoonful twice a day is not too much for a fowl showing consumptive symptoms. Dryness and warmth, with generous, but not stimulating, diet, are essential to give a chance of the bird's recovery. Pour the oil down the bird's throat, and this is facilitated by passing the tube of a small funnel into the bird's throat. Do not be uneasy about the noise in the hen's windpipe.

KITCHEN-GARDEN SEEDS FOR AUSTRALIA (T. F. I.).—All good kinds will be acceptable there. When correspondents enquire about Australia they should name some part of it. There is nearly as much difference between the climates of the north and south as in the north and south of Europe.

NAMES OF PLANTS (C. S. A.).—No. 1. *Loasa lateritia*. No. 2. *Sedum Sieboldii*. No. 3. *Sempervivum tortuosum*. No. 4. *Linaria cymbalaria*, or Ivy-leaved Toad-flax; an English Plant. (*Lancastriensis*).—The yellow flower is *Lysimachia verticillata*: the other, *Reseda alba*, or Upright White Mignonette. (Rev. R. M. E.).—*Ixodia achillæoides*.

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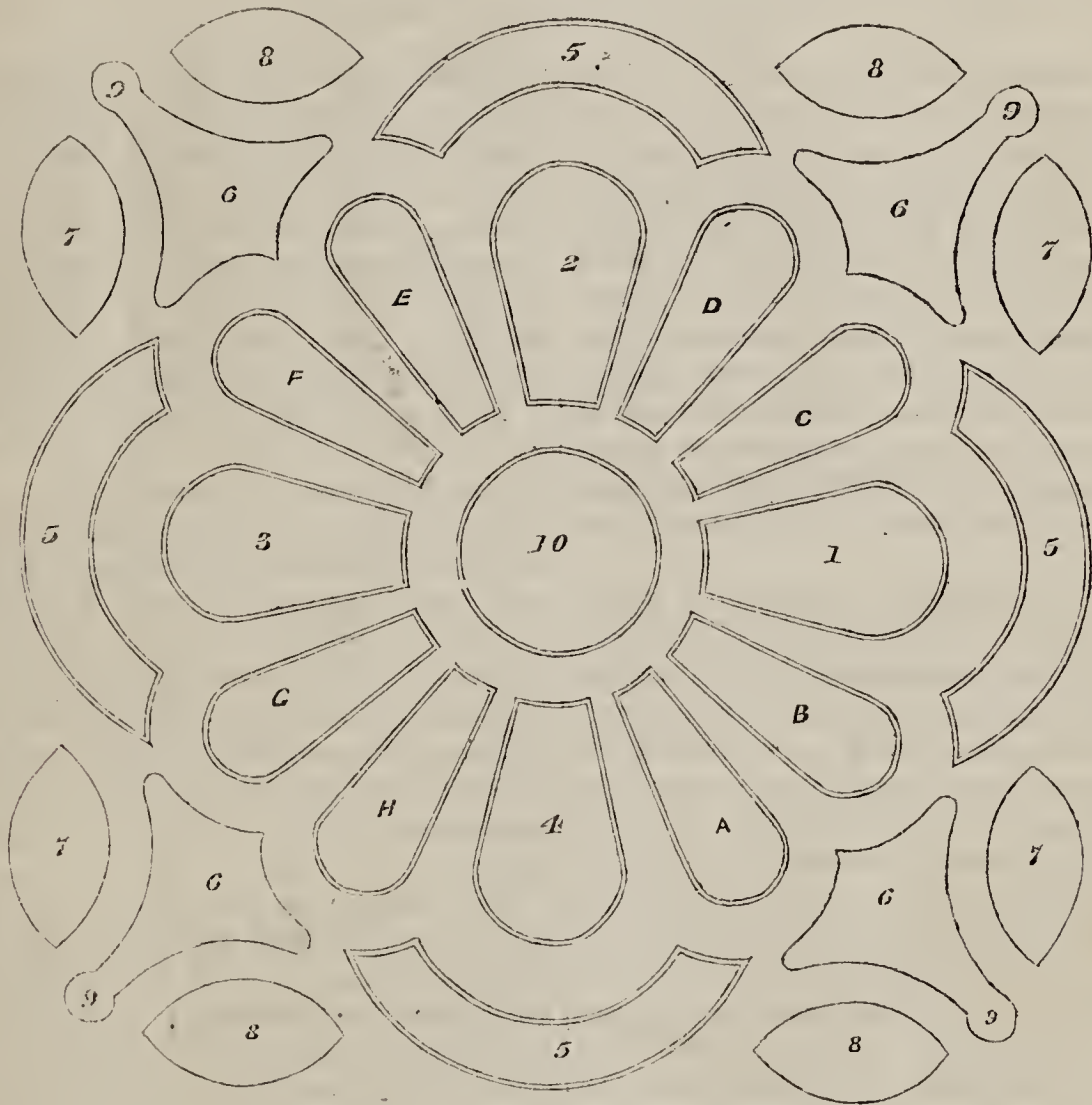
WEEKLY CALENDAR.

		WEATHER NEAR LONDON IN 1852.										
M D	W D	AUGUST 11—17, 1853.	Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
11	Th	Black V. ; limes.	29.351—29.123	67—52	S.	78	41 a. 4	29 a. 7	10 21	6	4 56	223
12	F	Clouded Yellow; meadows.	29.507—29.248	60—52	S.W.	47	42	27	10 46		4 46	224
13	S	Brown Hair-Streak; birches.	29.760—29.611	71—49	N.W.	—	44	25	11 18	8	4 36	225
14	SUN	12 SUNDAY AFTER TRINITY.	29.781—29.591	74—54	S.W.	64	46	23	morn.	9	4 25	226
15	M	Lunar-spotted Pinion.	29.866—29.293	70—47	N.E.	—	47	21	0 3	10	4 13	227
16	Tu	Bullrush; near bullrushes.	29.930—29.917	71—62	S.	—	49	19	1 1	11	4 1	228
17	W	DUCHESS OF KENT BORN, 1786.	29.914—29.678	76—59	S.E.	76	50	17	2 13	12	3 49	229

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 73.5° and 51.6° respectively. The greatest

heat 91°, occurred on the 17th in 1842; and the lowest cold, 32°, on the 13th in 1839. During the period 104 days were fine, and on 78 rain fell.

FLOWER-GARDEN PLAN.—No. 8.



1. Fancy Geranium, Jehu.
2. " " Clown.
3. " " Bouquet de Flora.
4. " " Hero of Surrey.
5. Geranium, Tom Thumb.
6. Crimson China Rose.
7. Calceolaria floribunda.
8. Lobelia erinus grandiflora.
9. Petunia grandiflora alba.

10. Mixed Fuchsias. A plant of Fuchsia scarletina reflexa, twelve feet high, for the centre of the bed, with Coralina, Ricciartonii and Formosa; and the old Globosa outside those; underneath the Fuchsias Heliotropes which will cover the bare stem of the Fuchsias.
- A. Verbena Apollon; violet-purple.
- B. " Ocellata; blush, pink eye.

- C. Verbena Celestine; lilac-blue.
- D. " Pauline; lilac, blush, purple
- E. " Auricula; light violet.
- F. " Macrantha; rose, dark eye.
- G. " Valentine de Savince; lilac-blue.
- H. " Adela; rosy-lilac, purple centre.

HERE is a great novelty in design, and the execution in planting is exceedingly good; 1, 2, 3, and 4 being about twice the size of the intermediate beds, and planted with Geraniums, while the smaller size is planted with smaller plants, Verbenas, shows, on the face of it, that the designer knew that all the plants in a flower-garden do not grow exactly to the same size, and that the sizes of the beds should be in proportion to the plants that were intended for them, and that is ten times more than many landscape gardeners and architects, who draw plans for flower-gardens, know anything at all about. No one ought to be trusted to make a plan of a flower-garden of five beds

unless they know exactly the ordinary sizes of the five kinds of plants that are intended for them; and not only that, but be able to provide five changes of plants for each of the same beds, and each change to be such plants as will agree with the size of the beds.

The above is the first plan in our series in which this elementary principle is so obviously recognised. I have insisted on the same principle for years, and I have gone so far as to say that each colour ought to have three sizes of beds made for it, in a first-rate design, and I have complained, over and over again, that the great majority of those who plan designs for flower-beds make the sizes and situa-

tions of the beds according to their own ideas of prettiness, if there is such a word, and not according to the different sizes of the plants to be put into them, or as the different colours can be harmoniously arranged in them.

What I have so enforced is the true principle of laying down any flower-garden. In Scarlet Geraniums, for instance, we have three sizes of plants, and the best of each size is, perhaps, the *Amazon* (Low's), for the tallest; *Punch* the middle size, and *Tom Thumb* the third size. Then, if you were to have only three Scarlet Geranium-beds in a design, is it better to have the three beds of the same size, and plant them all with one kind of Geraniums; or to have them of three different sizes, and plant with three distinct kinds and sizes of Scarlet Geraniums? The answer to this question will be a key to all the other colours, and distinct shades, which make up a good flower-garden. If any body chooses to have only one plant, or one size for each colour,

he or she has a perfect right to have it so, but not to push that out into the world as an example for others.

In the above plan, *Tom Thumb*, as in an outside belt, in beds 5, intersected at the four corners, with beds 6, in crimson, and the outward end of 6 at 9, in white, to cut off the blue and yellow in 8 and 7, is as cleverly and as simply executed as any thing I ever saw on paper. When we began to discuss this subject in *THE COTTAGE GARDENER*, half the world would put all the *Tom Thumbs* in the central bed, 10, and the 5's would be in white, as likely as not, just diminishing the effect to more than one-half.

Besides, notwithstanding the elegant simplicity of the whole of this design, you cannot enter the garden at a single point where you can walk up straight to the centre, to admire the splendid tall Fuchsias in the middle. Every one of these points are good fundamentals, and will never change or alter.

D. BEATON.

THE London Horticultural Society tardily, and, therefore, not so beneficially to itself as if done with alacrity and at once, is altering its course to that towards which for some years we have urged its attention. Long ago we pointed out that utility should be more the Society's object; and it has this year offered rewards for Salads and other kitchen-garden produce. We have pointed out that the charter of the Society established it for something more important than attracting together ladies and gentlemen to look at flowers, and listen to military music; and now it purposes to send out a plant collector, as it began to do in its palmy days, some thirty years ago, and continued to do until ten years since.

We know it is not palatable to some of the Society to be told by us that it is walking in the ways of error, but we must perform the disagreeable duty, notwithstanding; and we must now warn the Society, that it will become embarrassed, as it did in the days of Mr. Sabine, if it does not very promptly adopt measures to render its expenditure less than its income.

Divested of all extraneous statements, the income of the Society, during the last twelvemonths, was £6,315, and its expenditure £7,009. We are quite aware that this deficiency of £700 arose from the falling off of the receipts for admission to the Exhibitions; but we are quite sure, also, that not one member of the Society but must feel its degradation at being dependant for its very existence to such a source of income—a source of income, too, so uncertain, as to be decided upon by the absence of rain and cold winds.

It is not our province to go through the Society's items of expenditure, but there is one so apparently undesirable, that we cannot but recommend its abolition. We mean the publication of its Journal. There is an annual loss of more than £200 upon its publication, and every reader of it feels painfully that a work usually made up from translations of Foreign periodicals is unworthy of a leading English Society, and is not deserving of such an annual money sacrifice. It is more within our province to point out how the Society might increase its funds, and this might be achieved by having a general reduction of the annual Fellowship payment to one guinea. We would also admit the public on certain days to the Gardens upon

the payment of a very small entrance fee. The reduction of the annual payment ought to be more than compensated by the increase of Fellows, and certainly would be, if the Society, acting up to the words of its Charter, "improves horticulture in all its branches, ornamental as well as useful." To admit the public to the Society's Gardens would be so acting, unless the Society is conscious that there is nothing in the Garden that anyone would be benefited by inspecting.

We have been led from our subject, however, which was to express our pleasure that the Society, recurring to its early proceeding, has appointed a plant collector. We wish that an Englishman had been so appointed, not from any jealousy of foreigners, but because, as we agree with those who thought a British Sovereign should employ British troops, so a British Horticultural Society should be served by British gardeners. The gentleman selected is M. Matteo Botteri, a native of Dalmatia, and a naturalist of high attainments, and we sincerely wish him every success in the southern departments of Mexico, which he is purposed first to explore.

We anticipate to him good success, because the Society can command government aid and introductions in the land to which M. Botteri is proceeding, and because his predecessors reaped good harvests in the different fields selected for them. In 1821, Mr. John Potts obtained, in China, the *Chrysanthemums* which were the originals of our present collections. In 1822, Mr. George Don was despatched to the west coast of Africa, who would not have been sent in vain, had he done no more, to use the words of Mr. Sabine, than "lay before the Society a more ample account of the fruits than had hitherto been given to the public." In the same year, Mr. John Forbes was sent to Brazil, and his collections of bulbs, orchids, and other tropical plants, was an ample promise of even better things, had not death arrested him at his post in 1823. He died at Senna, in the August of that year, whilst making his way up the Zambezi River, on the east coast of Africa. It was a loss, said Mr. Sabine, "which botanical science will long deplore." Mr. Potts may also be said to have died during his mission, for he contracted a disease, which terminated his life in the October of 1822, only a few weeks after his return.

Still following Mr. Sabine's narrative, we find, that as the garden stores of China were known to be still unexhausted, the Society sent thither, in the spring of 1823, Mr. John Damper Parks. "The success of this second mission was great; the plants obtained by it being, for the most part, of great novelty and interest, and nearly all of them having been received in excellent health." He returned in 1824. In the spring of 1823, Mr. David Douglas was also taken into the Society's service, and from New York and Canada "obtained many plants which were much wanted, and greatly increased our collection of fruit trees by the acquisition of sorts previously known to us only by name." So entirely satisfied was the Society with his services, that in the summer of 1824 he was despatched to the north-west coast of America. "His return," said Mr. Sabine, "is expected in 1826; and when we consider how rich in plants is the country to which he is gone, we may indulge the hope that most valuable additions will be made by him to the hardy inhabitants of our gardens." That hope was fully realized, as it was again when he was sent to California in 1830-32, and the gardener, when he looks upon the *Ribes sanguinea*, which Mr. Douglas introduced, may accept the specific name as a memento of his sanguinary death in the last-named of those years.

In 1824, Mr. James Mc. Rae, "a practical gardener of considerable experience," was sent on a similar mission to South America and the Sandwich Islands. We are indebted to him for *Phycella corusca*, and several other plants. Mr. Mc. Rae returned in the March of 1826, having visited various parts of Brazil, Chile, and Peru, botanizing among the still-too-little-known vegetation of the Cordilleras. He would have done well if he had effected no other good than bringing home living nuts of the *Araucaria*; but, in addition, his valuable collections of seeds and plants were very large, and he introduced to the Sandwich Islands not only a large supply of European fruits and vegetables, but most of the Brazilian valuable productions of the same kind. So efficient were his services, that, on the recommendation of the Society, our government appointed him Curator of the public Garden at Colombo, in the Island of Ceylon.

In 1836, Mr. Theodore Hartweg, a German, and at that time clerk of the Society's garden, was sent to explore the elevated regions of Mexico. He remained there until 1843, and the Society agreed "that the coniferous seeds alone, which were so abundantly raised and extensively distributed, amply compensated for the expense of the mission, independantly of the great variety of Epiphytes and Cactaceæ, besides the considerable number of miscellaneous greenhouse, hardy and half-hardy plants, introduced to the country by this means."

In 1842, Mr. Robert Fortune was delegated to examine the vegetable riches of China; but the success of his researches are too fresh upon our memories to require more particular detail.

We have thus enumerated the explorators employed

by the Society, and have dwelt upon their uniform success for the purpose of justifying, if justification be necessary, the heavy expenditure it is again about to incur. From this new expedition we anticipate very considerable success; for we have no doubt that the Society will say to M. Botteri, as it said to Mr. Hartweg—"Pray bear constantly in mind, that the great object of the Society is hardy and half-hardy plants, and that your efforts must be most particularly addressed to the collection of such species. We are glad to receive Epiphytes, Caeti, and other things, if they come in your way, or even if they are procured without too great a loss of time; but the mountain plants, Pines, Shrubs, and Herbaceous Plants, are what we chiefly want."

THE following letter is from Dr. Gwynne, one of our most persevering and successful poultry exhibitors. It is dated at Sandbach, August 2nd.

"'There's something rotten in the state of Denmark.' I am once more—for it is of periodical recurrence *after* exhibitions to which I send birds—thoroughly out of love with Poultry Shows and their incidentals. My birds from the Baker Street Bazaar have only just returned (to-day being the *tenth* of their confinement), two-thirds of them having that abominable and infectious running at the nostrils which has been so prevalent this season, but which, by an infinity of care and trouble, I have happily hitherto escaped. You know how full one's yards are of young birds at this season, and the almost impossibility, to say nothing of the amount of trouble involved in the attempt to do so, of preventing infectious disease, once introduced, from spreading through the whole stud. Truly, it is paying dear for one's ambition of Exhibition honours, to run even a chance of such a foul catastrophe. Time after time have I sent some of my most valued birds to shows, and always in the hopeful belief that this time they would 'manage things better;' but on almost every occasion have my not unreasonable expectations been disappointed; for scarcely ever are my poor birds returned to me until the third, or, as in the present instance, the fourth, day after the close of the show. Mr. Catling, in reply to a note from me, begging that my fowls might be sent off as early as possible on Saturday, and offering to pay anything that might be necessary to secure this object, by employing some one to attend to it, kindly wrote that all that man could do should be done to comply with my wishes. I make no doubt of the sincerity of this promise, and am convinced that the utmost that could be effected, with the aid at his disposal, was done; but I appeal to the fact of my birds having only returned on Tuesday, instead of Saturday, for proof of the inefficiency of the arrangement for the prompt despatch of the birds at the close of the show—a matter of at least equal importance with any of the other appointments necessary to the success and reputation of the undertaking, and which latter, were, I believe, on this occasion very good. Of what avail are some three or four men, under the direction of a secretary and an assistant, to the amount of work to be got through after the clearance of visitors on Friday evening and the next morning? If it is not made a question of expense, which, if the consequences to the owners of even an hour's avoidable delay in the return of their birds is at all considered, it certainly ought not to be, then, I cannot believe but that by employing a sufficient number of hands, under the superintendence of a few members of the committee (if committee there is, and if not, there ought to be, and for important shows, responsible ones), *every bird in the exhibition might be on its way home before middle-day on Saturday*. There are, doubtless, difficulties in the way, but none, I submit, of an insuperable nature; and, as an exhibitor, and, with many others, a frequent sufferer from the evils which obtain under the present system of delay, I would earnestly urge—

or may I not, in the names of such sufferers, and their name Legion, in all fairness, demand—that the committees of our large shows employ every possible means in their power to avoid the constant recurrence of the evils of which there is so much reason to complain.

“Pray do, Sir, agitate this matter, and use your personal and extended editorial influence with the view of effecting for us a better management of these things.—W. C. G.

“Wednesday.

“The above was written too late for yesterday’s post; and I open my letter to say—and I greatly rejoice to be able to do so—that the watery running from the nostrils of my returned birds has to-day almost disappeared, but in one, which on its arrival seemed to be the worst sufferer, there is still some thick discharge from one nostril.”

To the preceding letter we ask the effective attention of every committee man of every poultry exhibition. If such effective attention be not given, then will come the inevitable conclusions—no valuable birds will be exhibited, and poultry exhibitions will then deservedly close. There is not a word in Dr. Gwynne’s letter but should find an applauding echo from Bingley Hall to Baker Street, for every word is a word of friendly warning—unexaggerating the error it condemns, and uttered “more in sorrow than in anger.” It points out, what, indeed, needs no enforcing—that justice to exhibitors, humanity to the birds, and self-interest, all require that as much energy should be employed in shortening the period of the birds imprisonment, and getting them, without the loss of an hour, back to their owners, as there was in tempting those owners to exhibit them. Vehicles should be pre-hired to be ready to convey the birds to the several railway stations the very afternoon that the show closes; and it would be no more expense to have the force requisite to do so in a few hours, than to employ a weaker force for a few days. Efficient supervisors should be provided for this department; and if it be not provided and organised against other great shows which are approaching, the respective committees will be culpably negligent of all the interests confided to their care. Valid excuses readily suggest themselves for Mr. Catling, but none can be admissible for any experienced Society.

THE Meeting of the *Entomological Society*, on the evening of the 1st of August, was held in the Society’s new apartments in Bedford Row; and, by an arrangement concluded since the last meeting, the Council, Tea, and Museum Rooms, are now on the same floor as that for the general meeting.

Sam. Stevens, Esq., F.R.S., was in the chair. As usual, at this season of the year, the exhibition of new and rare species of insects, captured during the past month, were numerous, including a large collection of minute beetles, beautifully mounted on card boards, by Vernon Wollaston, Esq., and a large collection of Perthshire beetles and moths, sent up by Mr. Foxcroft for distribution among the subscribers to his excursion. It was mentioned, that amongst the beetles, Mr. Foxcroft had been so fortunate as to capture a species of fire-fly new to these islands—namely, the *Lampyrus splendula*. Mr. Foxcroft also sent up several species of

large *Fungi*, inhabited by the larvæ of the two rare kinds of beetles, *Boletophagus crenatus* and *Thymalus limbatus*.

Mr. Stevens exhibited two very rare moths, *Pachetria leucophæa* and *Hadena dentina*, recently taken at Mickleham; and Mr. Wilkinson, the cases of caterpillars of the curious little *Tinea mascubella*, the caterpillars of which have the instinct to form moveable cases, within which they reside, consisting of small oval bits of leaves, which they cut out with their jaws, and fasten side by side in pairs; so that the case has the appearance of a miniature oyster, the caterpillar residing within, and thrusting out its head when it wants to eat. These interesting cases were found on the Beech and Hornbeam.

Mr. Douglas exhibited several rare moths taken at Cheltenham, including *Heliothis marginata*, *Ino globularia*, &c., all of which he had found flying round the flowers of *Silene inflata*, which has proved very attractive to the night-flying moths.

Mr. Bond exhibited some *Parsnip leaves* which had the appearance of having been scorched, thus resembling that of Potatoes infested by the blight. It was impossible to attribute the disease to the attacks of insects, as he had found only a very few minute aphides of Ichneumons on the plants. Mr. Westwood stated, that the Potatoes in his garden, at Hammersmith, had been struck with the disease on the Sunday before, although previously nothing could be stronger and cleaner than they were.

Mr. Edwin Shepherd exhibited a curious variety of the common moth, *Anticlea rubidaria*, in which the two bands on the fore-wings are partially confluent. Mr. Douglas read an extract from the volume of Layard’s “Nineveh,” recently published, relative to the use of locusts as food by the Assyrians—one of the sculptured stones representing a procession of servants bearing fruits, dates, pomegranates, grapes, &c., whilst others carried sticks to which locusts were attached in rows.

Mr. Frederick Smith read a paper on the habits of *Pompilus punctum*, and other burrowing *Hymenoptera*. He had received, from Mr. W. Thompson, a number of small oval mud cells at the beginning of last November, which had been found at the top of a straw hive, as well as at the back of a mirror in a house in the neighbourhood of Canterbury; having placed these in a box, several males of *Pompilus punctum* were disclosed in the middle of the month of June, and shortly afterwards, the female, which proved to be the insect which had been described as a distinct species, *P. petiolatus*; whilst the insect described by Mr. Shuckard as the true female of *P. punctum*, was, evidently, only a variety of the male of that species. The female of this species is destitute of the rows of small bristles on the fore legs, which are found in most of the species of the passorial species, and hence, such spineless species had been regarded by St. Fargean as unable to form cells for themselves, and were, in fact, parasites in the nests of other species; but Mr. Smith’s observation proved that the want of spines was owing to the difference of the material of which the nests are formed, this species

making use of clay, whilst the others form burrows in sand, for which purpose they have need of brushes on their legs to brush away the fine particles of sand. This enables us also to account for the habits of the singular genus *Pelopæus*, so interestingly described by Mr. Gosse, in his work on the Natural History of Jamaica, recently published. *Sapyga punctata*, and *Trypoxylon figulus*, also regarded as parasites, had been described by Mr. Smith in the fact of carrying off the small caterpillars of moths for the purpose of provisioning their nests; whilst *Odynerus parietum*, also destitute of bristles on the legs, makes its cells in bramble sticks, but generally selects those which have been previously burrowed into by other insects. He also opposed the opinion that some species of *Hymenoptera* pass the winter in the pupa state. This he had never found to be the case, as they either go through the winter as larvæ, or as perfect insects ready to burst forth at the first approach of spring. The idea that the cold is destructive of these insects is untenable, as he had seen larvæ of the Wild Bee, *Anthophora Haworthana*, frozen so hard that they might be broken in two, and yet these had been the first to arrive at the perfect state in the following spring.

An extract was read, from *The Gardeners' Chronicle*, on the employment of chloroform for stupifying bees when it was desired to take the honey, the fumes from which were more efficacious than those of puff-balls. Extracts were also read, from an American newspaper, of the great ravages committed in the United States upon all kinds of trees by the caterpillars of some small kinds of moths, most probably belonging to the family *Tortricidæ*. This pest had not been before noticed by American horticulturists and agriculturists. A letter was also read, addressed by Dr. Schaum to Mr. Wollaston, announcing the death of his uncle, *Professor Germar*, of Halle, the distinguished Entomologist. Mr. Westwood exhibited specimens of a new kind of *Silk*, in different stages of manufacture, recently imported from western tropical Africa, communicated to him by the Rev. Mr. Venn. In its manufactured state it forms, when mixed with cotton, a very strong texture, and is the produce of the caterpillars of a small moth, which, unlike the Silkworm caterpillar, spin their cocoons in a mass as large as a man's double fist. Mr. Douglas read a translation of a report by Dr. Goeppert, of Silesia, on the recent progress in our knowledge of the history of the singular insects composing the order *Shepsiptera*, and in this supposed relationship with the beetles, first suggested by Dr. Burmeister, and subsequently by Newman. A discussion took place on this subject, in which Herr Schrodte, of Copenhagen (who had also maintained the same view in the introduction to his work on the Coleoptera of Denmark), and Messrs. Westwood and Waterhouse took part. Lord Goderich, Captain Cox, and several other gentlemen, were elected members of the Society.

COVENT GARDEN.

WE have seen, when journeying through the provinces, and at a distance of seventy and eighty miles from the Metropolis, cart loads of potted plants in full bloom being hawked from town to town, village to village, and house to house. These carts professed, by the name and address on the sides, to have travelled with this load all the way from London, and the owners disposed of these plants at prices which sometimes astonished the country nurseryman, considering the distance they had been brought. It is true, the unguarded ones were sometimes taken in, and, yielding to the oratory of the vendor, paid double and treble the price they could have obtained the same article for at an adjoining nursery. Indulging the charitable belief that these were come honestly by, we never could understand how it was that these men could travel so far, paying travelling expenses, and keep themselves and horse out of the profit arising from the sale of the plants. Some, to whom they were opponents in trade, were less charitable, and, with gesticulations adapted to the verbal expression, declared, they must have got them in a way, or from a source, which honest men, like themselves, would have been afraid of. We, too, we must own, had many surmises on this subject; but within these last few days we had facts brought to our eyes and ears which have for ever dispelled any misgivings on the subject.

It was but the other day we saw a costermonger's truck laden with *Geraniums*, *Heliotropes*, *Petunias*, *Fuchsias*, *Lemon-scented Verbena*, and many other flowers of that class, all well-grown, and potted in what are called 48-pots. A donkey did the mechanical part, and the man did the vocal, and that, too, almost as well as the donkey himself could have done. The burthen of the vocal part was—"Buy my flowers a-blowing, a-growing; five a-shilling, five a-shilling; all one price!" We listened while the echo of "five a-shilling" played upon and around us, and again the same vocal parts, louder than before, was performed. We could hardly believe we had heard aright, and, turning to our tiger, who was sitting beside us, enquired—"What does that man say, boy?" "Plants five a-shilling, sir," was the reply; and five a-shilling it was, for we pulled up to hear a repetition of the vocal part. The great mystery of the perambulating florists was at last solved, and then we understood how it was that they paid expenses, and kept themselves and horse by selling potted plants at 1s., and sometimes 2s. 6d. a-piece; for, on inquiry, we find they buy them at from 10d. to 1s. 6d., and 2s. per dozen, pots and all—a fact for country nurserymen.

The supply, both of VEGETABLES and FRUIT, continues in abundance. *Peaches* and *Nectarines* make from 7s. 6d. to 2ls. per dozen, and are of very superior qualities. *Grapes* are from 1s. to 2s. 6d. per pound; and, in some instances, when very fine, 3s. 6d. *Strawberries* are nearly over, and are small and indifferent. *Cherries* are still plentiful, particularly the *Black Currant*; but *Bigarreaus* are over, or nearly so. *Currants* are plentiful, at

from 2s. to 2s. 6d. per half sieve. *Apples* are now general, and consist of the *Old Joanneting* and *Margaret*. Of the former, we have not seen so many in the markets for several years; they make 4s. to 5s. per bushel. There are windfalls of other and later sorts, which are used and only fit for cooking. *Pears* have also made their appearance; some from the continent, which consist of the *Long-stalked Blanquet*, or, as the French call it, "*Blanquet a long queue*," and the *Petit Muscat*. Of English growth, we have the *Green Chisel*, and a few unripe *Lammas*. *Plums* from the continent have arrived, unripe, and in bad condition, as usual. They seem to be the *Orleans*, or, as they call it, "*Prune Monsieur*."

VEGETABLES, as we have already said, are abundant, and make the same prices as we have quoted in former reports.

H.

THE LILY OF THE VALLEY.

PRaises may be published of recent introductions, but which of them may ever supplant this, or the Moss Rose, or Mignonette? Some things, therefore, in gardening, are beyond the caprice of fashion, and nobody doubts the continuance of their influence. For the bridal, or any other, bouquet, who shall despise this lovely and chaste flower, whether as a denizen of our forcing houses from December until March, or as yielding its charming groups of little snowy and fragrant bells in our borders and woodland walks in May and June? Some account of its culture, from one who has grown it in various forms for the last twenty years, may, I trust, prove useful to the readers of THE COTTAGE GARDENER.

We gardeners are placed in a somewhat singular position, in some respects—a "thrice told tale" comes with a tolerable good grace from a talkative gardener, providing he can throw any new matter into his subject; and what gardening topic is it into which new life cannot be infused? The out-door culture of this Lily is the first consideration; for, like the Sea-kale, its style and quality, when forced, depends much on its high culture during the growing season. The Lily of the Valley will grow pretty well in any good garden soil; but to grow it in the highest perfection of which it is capable, some extra consideration must be given to the compost. It succeeds to admiration withus in a dark and unctuous loamy soil; and we have a north border here in which I have grown my whole stock for twenty-two years, merely changing from one end to the other in making new plantations. But this border is exceedingly rich in decayed vegetable matter; and those who wish to excel in Lily of the Valley culture, must not fancy, that because this plant is found growing tolerably well in neglected situations it is averse to manures and high culture. We have seen them grow in woods in great breadths, and in tolerable style; but then the two chief conditions were present—partial shade, and abundance of the decayed leaves of many years.

As to the staple soil, then, for Lilies of the Valley, I am of opinion that a darkish and somewhat stiff soil will produce the finest buds; and one essential is, that the ground be not liable to droughts, for they love a permanent moisture. As to shade, I have ever found them finest on a north border; but, be it understood, they are not within five feet of the wall, consequently, the sun shines freely on their foliage; but then the border surface inclines considerably to the north, and, of course, the ground is much cooler and damper than

it would be on a southern incline. It is very probable that an east or west border would be superior still.

There are, at least, three distinct modes of cultivating Lilies of the Valley for forcing. The first, growing them in patches in the open ground, and potting such patches when two years old. A second is, to grow them in pots; the latter plunged in a rich medium; and a third, to take up the roots, and single them out in November, sorting all the finest eyes, and placing them thickly in pots adapted to the purpose. I think, that for very early forcing, those grown in pots will be found the best, inasmuch as it is necessary that the roots should not be disturbed, and that the crowns should go to rest betimes. For succession crops they may be cultivated by the first mode; and for the latest the third mode may be best adopted. Let it, however, be distinctly understood, that I do not by any means desire to "hedge in" any of our readers by this course alone; they will do well by any of the above modes, if the roots be strong; if they are badly grown, the forcer will be defeated in his aim. I may now detail the planting process, together with the preparation of the soil.

Let a plot of ground be selected in the beginning of March; a plot possessing the conditions before named. It must be deeply dug, and the parts well broken, and during the process means must be taken to introduce as much as four inches in depth of very old manure; the kind I prefer is old hotbed linings, composed of about equal parts manure and tree leaves, but which have crumbled to pieces with age and turning. To those who cannot obtain such a valuable article, I say, lay hold of any old black residue, whether of the wood-pile, the rubbish-heap, old thatch, or old rotten weeds; anything which has once been living vegetables, and has become a black residuum, through age and exposure to the air, is eligible. This, however, I address to the needy; for, after all, there are few things so good as the hotbed linings. The ground being thus prepared, stations may be marked out for the Lily patches, if to be forced in pots, according to our first mode. We force them in pots of about nine to eleven inches diameter, and it is necessary so to plant the patches, as that they may readily fit the proper sized pot when taken up.

The ground is marked out in lines of two feet distance; these lines to receive the patches of Lilies at about fourteen inches apart; therefore, pegs put down at that distance form points around which a thick cluster of Lily-buds has to be planted. This done, a pot of about seven inches in diameter is used to stamp circles around each peg, and on this circle, and within it, the Lily-buds are dibbled as thick as they can be placed. Each patch will thus be made to contain from twelve to fifteen eyes or buds, which is as many as are necessary to form a good potful of blooms; and when planted, a top-dressing of rotten manure, in a mellow state, is spread nearly three inches thick all over the surface of the Lilies. Through the ensuing summer they are kept clear of weeds; and after a second summer's growth they are first-rate buds, and will give every satisfaction to the forcer.

I may now advert to the second mode: *growing* them in pots. I will not say what has been done, or what may be the general practice; but rather point to what I conceive would be a superior practice. I would advise that pots of a peculiar character be "made to order" for them; and that for two reasons—one, that none of our ordinary pots are well adapted to set off their character to the best advantage; and the other, that pots differing somewhat from the common run will facilitate high culture. They need a pot wide and shallow, rather than narrow and deep; and I think we may say, pots about ten inches in diameter, and about seven to eight in depth, would be highly eligible. But as I have to recommend a plunging mode of culture, in order that the

roots may avail themselves of a richly-prepared soil outside their pots, the pots should have plenty of holes all over their bottoms, and even round the side, about a couple of inches above the bottoms of the pots.

The crowns, or buds, should be planted as thickly as they can be set in the beginning of March; and the compost must be of the most generous description. About half of an unctious loam, and the other half old dung and leaves, almost become a mould, with a little silver sand, will grow them well in pots, putting some coarser manurial matters over the drainage; and if crocks are used, they should be very coarse, in order that the fibres may get through with facility. These things done, I have to recommend a prepared bed to plunge them in. Nothing would be better than a bed of half-decayed leaves, or anything of similar texture, even manurial matters. This should be quite above the ground level, in order to avoid swamping. As before observed, a situation where they would get only half-a-day's sun would be well, only there must be no trees overhead. They would require regular waterings through the season, and, when in active growth, liquid-manure.

Now, it will require a second season's growth to produce *strong blooms*, although, with every appliance, they may be bloomed the first season, providing the roots were very strong. A second season's culture, however, will amply repay the exercise of patience. In November of the first year they had better all be moved, and those roots which are through the pots trimmed away; for if suffered to proceed unprotected, I fear the check would be too great in the second autumn. Being turned round, therefore, or replunged, they will be ready for another summer's culture; and about the second week in October, or as soon as the foliage begins to assume an autumnal tint, those which are required for *very early* forcing may be unplunged, the side fibres outside the pots cut off, and the pots placed in a very sunny corner, to hurry their buds to a state of rest. Before the sharp frosts set in they may have their decayed foliage cut away, and be plunged overhead.

About the third practice little need be said. The soil will, of course, be prepared as advised in the first detailed practice, and in planting, the roots may be either dibbled thickly in rows, or planted all over the bed. In all other respects they may be treated as the others; and at the end of the second summer they will be fit for forcing. The buds intended for selecting from must be taken up in the beginning of November, and the roots sorted carefully—all the largest crowns being reserved for potting. These may be singled out and dibbled into any size of pot or box desired, and protected as recommended for the others.

Thus much for culture out-doors. Now a few words about the forcing. There is no difficulty in this procedure if plenty of time be given; for they would, doubtless, blossom much before the usual period, if only placed beneath the greenhouse stage; but to obtain good blooms in December and January is altogether another affair. To accomplish this, it is necessary to resort to bottom-heat, and I have found from 70° to 75° most congenial. My practice is to plunge them overhead in warm tan or leaves; but care must be taken to uncover them as soon as they have sprouted about two inches in length, or they will become so weak as not to be able to sustain their weight. It is necessary to place a lighter or finer material over their crowns when plunged, or the pressure of the leaves or tan will bind them down and spoil their character. I always pile up a mound of finely-riddled old tan over them, and this answers admirably. We sometimes force them in the mushroom-house; sometimes in front of a pine pit; and, indeed, the structure is quite immaterial, as darkness is essential until they have sprouted a couple of

inches. Care must be taken, on their first introduction to light, that it be done gradually; and it is best to place them in a shady part of the greenhouse or other structure for awhile, protected equally from cold currents of air and from sunshine; and they should be frequently syringed; in fact, a rather moist atmosphere is indispensable; and a temperature from 50° to 60° will be amply sufficient until in blossom, when the cooler they are kept the finer will the blooms be; the longer they will endure; and the higher will be their scent.

When the foliage becomes green, by exposure to light and air, they will be improved by sunshine at an early period; but as the spring advances little sunshine will be necessary. They will require water liberally whilst in blossom. The freer the circulation of air the higher will the scent be; and I should prefer, at the blooming period, a temperature of from 40° to 55° to a higher one, and they will thus continue much longer in blossom.

R. ERRINGTON.

BULBS.

(Continued from page 198.)

HYDROTÆNIA MELEAGRIS.

THIS is one of the most curious flowers belonging to the natural order of Irids, and is as easy to grow as a *Tigridia*, to which it is very nearly related, looking just as if it were a cross between *Tigridia* and *Fritillaria*, if that were possible, which it is not, the two being in two different natural orders.

The flowers are purple, chiefly spotted with yellow, and shaded or marked with grey and violet; one of those exquisite pencillings which must be brought close to the eye before the real beauty can be seen or appreciated. Dr. Lindley, who named this plant (*Fluid Band*) a few years since, from a triangular band at the bottom of the petals, from which honey is secreted, goes on to say, that "the curious watery band which glitters as if covered with dew, or as if constructed out of broken rock crystal, is one of the most curious I know." The bulb is a native of Mexico, from the mountains near the *Real del Monte* mines, and, therefore, is a hardy frame bulb in this country; but the right way to treat it is in every respect the same as with the common *Tigridia*, only that it will not stand forcing into early growth in the spring like *Tigridia*. It will grow in any good, light, garden soil, and ought to be taken up late in October, kept dry all the winter, and planted four inches deep any time in March or April, and then it flowers in a good long succession in July and August, on rigid stems rising eighteen inches high, and, if the weather is not too wet at the time, seeds will ripen before the end of the season. The colour of this flower is mistakenly said to be yellow in our *Dictionary*; but there is a yellow-flowering kind from Lima, called *lobata*, said to be in our gardens, but I know nothing about it.

HYMENOCALLIS.

This is one of the most expressive names we have among all the bulbs, the literal translation of it being *The beautiful union cup*. It was a happy idea of the late Mr. Salisbury, to compare the union of the snow-white *nectarium*, or coronet or centre-cup to the bottom of this flower, itself equally white and pure, to the union on the hymeneal altar.

In the last volume, at page 320, I went a little out of the way to question the validity of the genus *Choretis*, and showed the very small way it differed from a true *Hymenocallis*, but I shall go much farther to-day in quest of other branches of the family. The headquarters of *Hymenocallis* are in the hottest part of the

globe, along the coast between Caraccas and Carthage, where the species attain their highest development; large, pure white flowers, with very large coronets, broad, strongly-veined leaves that rise on distinct footstalks, as *speciosa*, *Guianensis*, and *amœna*, alias *Pancratium amœnum*, of our old stoves, with their numerous varieties, but as they travel either to the south or to the north, they take such different forms and colours to suit the peculiarities of the countries and climates they inhabit as have misled the most learned, and hence such names as *Choretis*, *Elisena*, *Callithauma*, *Ismene*, and, probably, *Eurycles*, with *Eucrosia*. If we, then, add to these the attempt recently made by Dr. Lindley, to unite *Hymenocallis* to the *Pancratiums* of the Old World, we shall have an assemblage of such beautiful and graceful forms, such delicious perfumes, and such varied colours, as the Tulip presents. For the present, however, it is sufficient for our purpose to know that the true *Hymenocallis* reach as far north as Virginia; that these hardy bulbs will cross freely, and have been so crossed with the finest and most perfect of the stove species, *amœna*, and *speciosa*, and thus, like the Cape *Crinum longiflorum*, and the great Columnar Asiatic species produce half-hardy, and much improved races; and that, although hitherto no *Ismene* has been got to cross with any of the true *Hymenocallis*, there does not appear any impediment to such a cross, since *Elisene* and *Choretis* have been discovered, both of which seem to be as much related to the old *Amœnas* on the one hand, as to *Hymenocallis* on the other; in fact, the intervening links through which the most perfectly yellow, and the best yellow bulb (*Ismene amœna*) of the whole American continent, seem destined to unite with the most beautiful and fragrant white flowers of either the Old or New World, for the production of new, valuable, half-hardy races, as varied in their aspects as those of *Narcissus* itself. Besides, if it should turn out that *Callithauma* is really an *Ismene*, dressed in emerald-green, see what endless variations are yet locked up from us in a few wild flowers, and these capable of being rendered more hardy at every turn of the cross.

All the old gardeners must recollect the dozens and dozens of them called *Pancratium amœnum*, *fragrans*, or *speciosum*, that used to be grown in No. 16 pots, in the pine stoves, five-and-twenty years ago. That beautiful and most fragrant flower is still the best in the genus, which is now called *Hymenocallis*, and *Speciosa* is the true name for it.

All the *Pancratiums* belong to the Old World, all of them prefer dry to wet ground in a state of nature, and all of them have dry, black, shelly seeds. In these particulars they differ widely from *Hymenocallis*, which are all natives of the New World, prefer damp and even swampy soil to dry, and their seeds are more like soft round beans than anything else; but, notwithstanding all that, and even with the knowledge of the habit and the habitation of a bulb in either genus, there is not a man who can tell the one from the other in the absence of the seed. No wonder, therefore, that some of our best living authors, having had to deal with new plants, without a knowledge of the seeds, have made wide mistakes in *Hymenocallis* and its allied branches, as we shall see under the description of some of the species.

All the species of *Hymenocallis* proper will do better in rich, heavy land, such as would grow beans well; and the stove ones will endure, and even enjoy, a stronger heat than the Pine-apple, if they have a constant supply of water at the roots, by having the pots kept in saucers of water all the summer; and the greenhouse ones from Guatemala, Mexico, and Florida, will thrive better if the pots and bulbs are plunged in water for three or four months in the summer; and I am half convinced that most of them might be grown in water-glasses, like

Hyacinths, and would flower as freely as possible during the summer that way. I had more than enough of *H. Harrisiana* direct from Mexico, and the first of them that flowered in England was in pure water in a succulent house, by way of experiment, and with the great force of growth the seed pods split almost before the flowers faded, which was thought at the time to be a peculiarity belonging only to this one species, as is stated in the "Botanical Register," where it is first described; but I suspect that the water culture in summer would stimulate all of them to freer growth—at least, I never found one of the family that would refuse to grow with a saucer of water under the pot.

From the limited knowledge we possess of many new plants, when they are first described in botanical works, especially those from the north of India from Mexico, and Peru, where stove, greenhouse, and almost hardy plants, grow within short distances of each other, we are often led astray in which department to register our new plant. Stove plants are thus called greenhouse plants, and some that are all but hardy are referred to the stove, only because it so happened that the plant succeeded so far in the stove—then, when a compiler wishes to make out a catalogue or dictionary of plants, he must take them as they were first described in books of authority, whether they were right or wrong, except where he happens to know more of them than the first authors. All the greenhouse species of *Hymenocallis* in our Dictionary are right, except *ovalifolia*, which is a high stove kind, that has been lost for years; but among the stove species are some that are as hardy as to have stood out-of-doors in England for nearly twenty years, flowered every summer, and ripened seeds in abundance, yet they were marked as stove plants on their first coming. I shall not mention one, however, which I do not know would live in a greenhouse all the year round.

HYMENOCALLIS ADNATA.—This is the head of a race of very beautiful hardy bulbs, or all but hardy, natives of the more temperate parts of Mexico, and all aquatic, or half-aquatic bulbs—that is, if they are cultivated in pots, they ought to be plunged in water from the end of April to October, and only receive common pot culture in a frame or greenhouse through the winter; but the best way would be to plant them by the side of shallow water, setting them as low in the mud as that the frost would not hurt them. The way to know the varieties of *adnata*—and perhaps there are many more of them to be introduced—is very simple: the bottom of the coronet adheres (*adnata*) to the flower or limb in every one of them, while in all the others it is free. A stove species, called *expansa*, is the very opposite to *adnata*—the flower of *expansa* opens so wide that it seems as if it were going to roll backwards, and the coronet stands out in the centre, looking more like the real flower than a nectarian appendage; in *adnata* the two cannot be separated, because they are glued together, as it were, all round the bottom. The usual name by which *adnata* is known in our gardens is *Mexicana*; the flower is all white, and the coronet is divided by deep slits. Dr. Herbert had it planted out in front of a stove, where the snow lay on it for some weeks, the first winter, without killing the leaves, and it blossomed in a large tuft for nearly twenty years, without any covering in winter all that time, but it had large doses of water in the summer. As many as sixteen flowers would come on a scape.

HYMENOCALLIS ACUTIFOLIA.—This is but a variety of *adnata*, alias *Mexicana*, with narrow leaves, and the coronet not so much cut. It is a hardy greenhouse aquatic, that would flower out-of-doors plunged in a cistern, where it likes to remain all the year round, whether in or out. This beautiful bulb would grow and flower in a sitting-room, in a jar or glass of water, half filled with moss, and look very interesting.

HYMENOCALLIS STAPLESIANA.—Named after Mr. Staples, who sent it, and many other novelties, to Mr. S. Tate, of Sloane Street. It is the hardiest of all the *adnates*, and differs from the others only in the relative length of the tube of the flower, and by the long leaves being much narrower at the bottom. It makes as many offsets as a *Coburgia*. A bulb of it, half-a-yard from the front wall of the stove, standing before *adnata*, No. 1, grew for years with such luxuriance as to almost overpower the bulbs behind it, the leaves rising two feet high, the plant flowering and ripening seeds every year. Another bulb of it in a pot, set in a pond, grew still more vigorously, indicating the preference of these bulbs to water.

HYMENOCALLIS DISTYCHA and **DRIANDRI** are two other varieties of *adnata*, to be distinguished only by botanists by slight marks of which gardeners take no account. The truth is, that if any two of these were crossed together, the produce would furnish all these varieties, and any one may be content who can now get a true *Hymenocallis Americana* in the nurseries; in botanic gardens, *distycha*, *adnata*, or *Staplesiana*, are the only names by which they are known.

HYMENOCALLIS ROTATA.—This is a very old species, of which there are two varieties in cultivation, one from Florida, and the other from Virginia, where it grows in deep bogs; both have the coronet much wider than is usual, with a little green at the bottom, and the edges cut into teeth; in short, approaching as near to *Choretis glauca*, from Texas, as the difference of localities may be supposed to admit of, in a genus that ranges from Virginia to Buenos Ayres, on the one hand, and on the other up the Magdalena, across the great chain into Peru, and back again into the valley of Cusco, under some guise or other. If *rotata* will not cross with *Choretis*, let natural seedlings of both be reared, and they will cross, no doubt; then we shall get into *Ismene* by a side wind. In a very excellent work, got up at Birmingham, some few years ago, called "The Floricultural Cabinet," this *rotata* is well figured as a new plant called *Ismene Knightii*; so difficult it is to decide when we approach the edges of allied sections of a great family like this. The only work in which the true name is given, is Loddige's "Botanical Cabinet," plate 19. "The Botanical Magazine" calls it *Paneratium rotatum*, and surely by one or other of these names, it could be hunted out, for we cannot do much good in crossing without it (see *Choretis*).

HYMENOCALLIS CAROLINIANUM is only a name, by Catesby, for *rotata*. Then we have another called *Panamensis*, which is the nearest to *Harrisiana*, and both like a little treat to get up their flowers, for they are not quite so hardy as those named above; but *Panamensis* is very sweet, and a great flowerer, and the segments into which all of them run from the limb of the flower are as long in this as in any species from within the tropics, full four inches long, and curving beautifully all round the outside of the flower; the misfortune is, that all these half-hardy bulbs have been subjected to a stove culture, by nine growers out of ten, because they looked so much like the old *Paneratiums*; the consequence was, that they were soon lost, and gardeners got sick of bulbs, and of all other plants that were not encouraged at exhibitions.

HYMENOCALLIS SKINNERIANA.—This is the last and newest one, I believe; but how far it may differ from the other Mexican flowers I cannot say, for I never saw it, and I have no description of it by me to see if it belongs to the *adnate* section.

HYPOXIA.

This is the next genus in the order of the alphabet; but I shall take the liberty to jump over it to-day, to get to *Ismene*, which I have said all along is but a limb of

Hymenocallis, and it seems a pity to separate so useful a limb from the main body, now that I am only speaking of the cold extremities, which remind me that *speciosa*, alias *fragrans*, *amæna* and *Caribæa*, are the best pot limbs either for pot or crossing purposes.

ISMENE.

Nothing could be more to the point than to give the name *Ismene* to this section of *Paneratoid* plants. The name is that of a beautiful woman of Romance, whose father, Oedipus, a king's son, married his own mother, in a mistake, neither of them knowing each other. Two brothers to *Ismene* slew each other, and her mother committed suicide. The affinity of these with allied bulbs was so suspicious to the mind of Dr. Herbert, at the time he instituted this genus, that he expected, sooner or later, that, at least, some of the members of the family should be torn asunder, and come to a tragic end, just such a work as we are bent upon this very day. The genus is altogether Peruvian; those of them marked as natives of Brazil were only garden plants cultivated in Buenos Ayres; there is no record of one of them being found wild in Brazil. Every one of them, without exception, will do better with the same kind of treatment as the old Jacobæa lily (*Sprekelia formosissima*) than any other way; that is to say, to be planted out in front of a hothouse in April, and to be taken up about the end of October, and kept dry all the winter. *Pedunculatum*, and more especially *Calathinum*, will live out-of-doors, winter and summer, just like the *Belladonnas*, and flower quite as freely and much earlier; but still, they are much improved by occasional dryings and a change of soil. The great yellow Peruvian Daffodil, *Ismene Amancæ*, does certainly better by being taken up every year. None of them like peat or leaf mould, but they would live in pure sand for a generation if they were well supplied with water during the summer; and it is best to put in a potful of sand, and put each bulb in the middle of the sand at planting time. Another very great peculiarity belonging to them, and to *Choretis* as well, is that their seeds vegetate in ten or fifteen days, but never throw up a leaf the first season; a fang starts away from the seed, like as from the bulb of some kinds of *Oxalis*, and at the end of this fang a bulb will form as large as a wren's egg, without any sign of leaf at all the first season; and that is very likely the reason why these beautiful bulbs are not as common as the *Belladonna*; and the next reason for their being so scarce may be, that their cultivation has not been treated of in popular works since Sweet's time, and that most people turned them into the stove, where they soon dwindle and perish.

ISMENE AMANCÆ (The Peruvian Daffodil).—This is the oldest and best known of the genus; a large, clear, yellow flower, the coronet or cup is also yellow, and nearly fills the inside of the flower, it has six green mid-ribs, and is jagged on the edges, the tube of the flower is also green, the leaves sheath at the bottom, and form a round column over the bulb. There is a beautiful sulphur-coloured cross between it and *Calathina*, which is figured in "The Botanical Register," vol. 20, plate 1665; and in "The Botanical Magazine," the species is called *Paneratium Amancæ*, vol. 30, plate 1224. It should always grow in the middle of a heap of sand, and out-of-doors, and not be planted till the beginning of May, but it will grow in a pot, and even force to flower a month earlier.

ISMENE CALATHINA.—The bulb, leaf, and growth, are very much like the last, but the plant is stronger; the flower and cup are large, and pure white; the flower is full four inches across; the tube is green, and there are six greenish stripes in the cup, as in that of *Amancæ*. No one knows where it is a native of, but it is more hardy and less fastidious about sand than the last. It

was first introduced from the gardens about Buenos Ayres. The seedling between it and the last is fertile, and has crossed again with the pollen of *Amancaes*, and a much hardier plant with a better flower is the result (see *Elisena*). Then, if *Callithauma* is really an *Ismene*, as Dr. Lindley thinks, we have emerald-green, golden-yellow, and the most silvery-white, to mix and vary into all possible hues, for the front borders of our green-houses, and south walls. Add to this the delicious odours in the half-hardy, white *Hymenocallis*, not to mention the exquisite fragrance of *H. speciosa*, from the stove, and surely it is worth while to make a fresh start with the *Pancratium*-like bulbs, and not go on for everlasting with such trumpery things as common Tulips, and Poppy Anemones. We are all so accustomed to Latin specific names, that not one out of a thousand pronounces *Caláthina* right; the word is of Greek origin, meaning, beautiful, and should be accented on the middle *a* instead of the *i*.

ISMENE DEFLEXA.—Another Peruvian species, with white reflexed flowers (not green), which comes the nearest to *Elisene*, being, as it were, the connecting link between the two genera, but in truth, *Choretis glauca*, and *Hymenocallis rotata*, are just as true links as *deflexa*, only we must not say so botanically; but let the cross-breeder go to work, and all these links will snap asunder like anything.

ISMENE KNIGHTII.—This is the old, beautiful, glittering, white *Hymenocallis rotata*, from Florida, where it grows, near Mobile, in swamps and ditches, very deep indeed in the mud; bulbs of it have been dug out from the depth of two feet.

ISMENE MACLEANA.—Named after a very worthy man, John Maclean, Esq., then in Lima. This is another large white flower, which Mr. Maclean says is one of the plants, celebrated by the Peruvians, under the name of *Amancaes*, and at the foot of the mountain on which it grows is held one of the greatest festivals of the Portuguese Church, at Lima, called the Festival of the *Amancaes*; at this festival they all wear nosegays and other ornaments made of this flower; but they put it into the stove, as usual, in the Botanic Garden, at Glasgow, to where Mr. Maclean sent it, and the probabilities are that they killed it outright. None of the family can bear the stove with impunity; they might just as well put the Scotch Thistle into the Orchid-house.

ISMENE NUTANS.—This is a book plant all over; there is not one of it in Europe, and there is not a man in Europe who knows where it came from, so the less said about it the sooner rectified, if it should not be the real thing.

ISMENE PROLIFERA of our DICTIONARY is only a seedling of the old *Amancaes*, which, under good cultivation, was supposed to be an improvement, and there are two or three more variations of it.

ISMENE VIRESCENS.—We missed this pretty little flower in the DICTIONARY, but it flowered with the Horticultural Society in the summer of 1840. It was sent to them from Cusco by Mr. Pentland. Many things that were sent by Mr. Pentland, from the highlands of Peru, have been lost through not knowing what temperature to give them; and very likely, some of the Fellows of the Horticultural Society, to whom *Ismena virescens* had been sent, soon lost it by placing it in the stove. When the flowers are in the bud they are green all over, look like so many green *Coburgias*, but when they open they are whitish, or greenish-white inside; rather small for this genus, but very neat, and they emit an agreeable lemon-like scent; the bulb spawns well, and is thus easily multiplied by offsets.

ISMENE VIRIDIFLORUM.—Notwithstanding the great authority of Dr. Herbert, I quite agree with Dr. Lindley, in considering *Callithaumas* as so many *Ismenes*; and here I register the type species of that green section, for

the looks of the thing, and as being the species for crossing in green, while I warn the cross-breeder against *viridiflorum*, except by way of experiment, on *Coburgias*.

D. BEATON.

FUCHSIAS FOR WINDOWS.

It is next to impossible to say anything fresh on this universally-admired tribe of plants. It is, nevertheless, quite evident, that many of our readers, from the enquiries constantly made, look upon the statements given as not at all applicable to them. If they are possessed merely of a window, the slightest allusion to a pit, frame, or greenhouse, leads them at once to skip over the subject, as one about which they need not trouble themselves. Until we and our readers together get more into the habit of generalising, we must often advert to the mode of doing *certain* things in *certain* circumstances; and, therefore, to-day I will confine myself to the Fuchsia in windows, where the proprietor has no other glass whatever to help him, and has merely the storing room of a shed, dry cellar, or garret. Let me premise, however, that the instructions and hints given are such as I have seen followed out in numerous instances with very good success, and without having recourse to any materials except what can be very easily and economically obtained in country or in town.

1. *Varieties suitable for the Window.*—Taste in this, as well as other matters, is continually changing. The rage just now is for kinds with reflexed sepals, though many with stiff, firm flowers are well fitted for the window, though destitute of the reflexing property. As a general rule, kinds should be chosen having twiggy shoots, small foliage, short joints, and flowers coming from most of them as the shoots grow. What appears very handsome in a large conservatory would often be out of place in a window. For instance, *Don Giovanni* suits the former; but, to have large flowers from it in a window, the shoots and foliage would require to be so luxuriant as to monopolise the best part of a fair-sized window for itself; and, beautiful though it might be, it would be beauty deficient in contrast and variety. Of course, the size of the plants may range in proportion to the size of the window; but, in general, plants from eighteen inches to four feet in height will be amply large. For low windows, the first size will present a pretty appearance, when the plants are robust and covered with bloom. To keep such a plant healthy would require from a four-and-a-half to a five-inch pot, and a four-foot plant an eight-inch pot—keeping in mind, however, that under-potting will always have a tendency to produce abundance of bloom, and large potting, large-sized leaves; while, when the flower-buds are swelling, size can always be given to the bloom in under-potted plants by mulching and manure waterings. Keeping these points in view, few sorts answer better for window culture than the old *Globosa*, with its improved varieties, *Globosa major* and *Atkinsonia*; the old *Coccinea*, and its comrades, *Thompsonii* and *virgata*; *Ricartonii*, *Buistii*, and that splendid dark-petalled variety, *Formosa elegans*, a variety superior to nine-tenths of those lately launched on the floral world to sink or swim after the first season.

Some time ago I saw a plant of *Globosa major* in a window, which a good grower would make a Sir John Falstaff. A variety with large, round, orbicular flowers, but disposed to be a little too luxuriant and long-jointed for a window, though if grown cool it would do. When, however, we receive lists of Fuchsias from window-gardeners containing such kinds as *Glory of England*, and *Banks's Glory*, we may rest assured that such florists are not to be satisfied with the old varieties that

pleased their sires. Leaving, therefore, the full-tide progress men to get the novelties as they come out, the following list will be useful to those who desire to have something really beautiful, and who are under the necessity of consulting their pocket as well as novelty.

Plants with more or less of the habit of the original COCCINEA.—Abundant bloomers, twiggy in their growth, reflexed sepals, and dark purple corollas. In point of suitability they will stand as they are named—*Voltigeur*, *Dr. Smith*, *Scarletina reflexa elegantissima*, *Ne plus ultra*, *Vivid*, *Diadem*, and *Black Prince*.

Plants of robust habit; free blooming; flowers pink, crimson, or rose, but no striking difference between sepals and petals, and the former not reflexed. *Exquisite*, *Rose d'Amour*, *Shylock*, *Confidence*, *Crimson King*, *Goldfinch*, *Eliza*, *Miellez*, and *Orion*, but the latter must not be over potted.

Plants with white reflexed sepals; corolla rosy-pinkish-crimson—*Prince Arthur*, *Matilda* (Henderson's).

Plant with light, reflexed sepals; beautiful light violet blossoms—*Gem of the West*. Tube and sepals a pure white, and approaching to it; the sepals not reflexed, but standing boldly; the corolla rose and crimson. *Pearl of England*, *One in the Ring*, *Purity*, *Snowdrop*, *Dr. Jephson*, and, as a neat little thing, though without white sepals, the *Venus Victrix*. If, in addition, any of our readers should covet such stronger-growing kinds as *Don Giovanni*, *Alpha*, *Lord Nelson*, *Duke of Cambridge*, &c., they will do well to grow them in poor soil, and under pot, and then use manure-water when the flower-buds begin to swell.

2. *Compost.*—Two parts rough loam, and one of peat, will grow the whole tribe admirably; but so will the soil obtained from nineteen-twentieths of the roadsides in the country. If, however, you could get the turf instead of the soil, and keep it until next March or April, it will be better than the under soil. In selecting a spot, do not choose it where the grass is soft and fine, but stiff and hard, the blades resembling so many needles. You will find, in the latter case, the turf is full of fibres. Choose it where the soil beneath is of a hazel-brown colour, instead of dark or black. Take off the turf from one to one-and-a-half inch in thickness; and whether you get a barrow-load, or a cart-load, take it up when dry, build it, one turf on another, grass side downwards, either in a shed, where it can be kept dry, or out-of-doors, where you can keep it wet. It will contain a sufficiency of moisture to cause the grass to decompose, and the air will sweeten the fibre without wasting it. But this soil may be a too strong loam for some plants, or you may wish some means of lightening it, and rendering it more porous, without going to the expense of having silver sand sent to you for fifty or an hundred miles. Well, the old road will stand your friend again. If made or mended with stone or flint, after each heavy rain a quantity of these pounded flints will be washed into the hollows in the shape of rough sand, and that as it is will be capital stuff for lightening heavy soil intended for Fuchsias and Geraniums; and if well-washed several times in a tub, and passed through a fine sieve, the finer particles would be admirably suited as a easing when propagating from cuttings; the middlemost, for roughness, would do for mixing with soil to keep it open; and the rough bits of pebble would do well over the drainage. A basket or barrow-load of this sand is, therefore, very valuable, and should always be kept dry. But the soil may be naturally poor, or may be rendered too much so, by an addition of a sixth or seventh part in bulk of this sand, and you want a safe, enriching agent, without undergoing any risk from artificial manures. Well, let us to the old road again; ten to one but there are trees in its vicinity, the leaves from these will fall in autumn, and, if collected in a heap, and turned several times the

ensuing season, they will be a safe enricher of the soil some twelve or eighteen months after they are gathered, and constituting then about one-sixth of the compost. But there is something better than these. By the side of that road, most likely cows and oxen will now and then be driven, or if such a thing, for a wonder, should never take place, you will not be far from an obliging neighbour, and somehow, very queer, selfish people, will oblige a flower grower sooner than any body else; and that neighbour would not object to your having a basket full, or even a barrow full, of dried cakes of cow-dung from his meadow. Now these, put in a heap, and kept dry during the winter, might be broken into small pieces, the size of a field-bean, and incorporated with the compost in about the proportion of one-twelfth, or, better still, rubbed through a rough sieve, may be used with great advantage as surface mulchings, as soon as the flower-buds appear; and if there you did not like its appearance, you could scatter over it a little sandy soil. A little charcoal, broken into little bits, to keep the soil open, or used above the main draining tile, will also be an advantage. Its very lightness gives it a superiority, for the latter purpose, over everything else. Even town growers should try and get the turfy soil, and then, with sand, a little charcoal and artificial manures, they will be able, even without cakes of cow dung and old leaves, to get on very well. The best of these manures that we have used for the Fuchsia, either scattered on the surface of the pot, or used in solution, is the superphosphate of lime; but see what was lately said on using it weak enough.

3. *Propagation.*—This is best done in the spring, when the young shoots are from two to three inches in length; but, as even for a window it will be desirable to have two, if not three, sets of plants for the season, it will be advisable to propagate, even in this month of August, though June or July would have been better, and April or May better still. We speak not now of the best mode of doing so, but the most successful in a window. Prepare some small pots, from three to four inches in diameter; fill them half-full of drainage, three-parts of the remainder with light sandy soil, and the one part next the top with the purest sand. Go over your plants even now, and you will find some little stubby pieces, from two to three inches in length; slip them off close to the stem with a sharp knife, dress away any bit of bark, remove a couple or so of the lower leaves, shorten one or two of the others, if long, and insert three or four of these cuttings round the sides of the small pot, and then water them, and when dry cover with a bell-glass. Previously to all this, however, the small pot should be inserted inside of a larger one, and the space between the sides stuffed with moss, or filled with earth and sand on the surface. If the glass will stand between the rims of the two pots, so much the better, as the drip will go there instead of on the plants if a conical glass is used. If this intermediate space is kept moist, the pot containing the cuttings will want little watering until they are struck. The advantage of this double pot in a window is, that extremes of moisture and dryness, and even of heat and cold, are avoided. Shade with a piece of paper when the sun shines upon them, but no more than is necessary to prevent flagging. After a few days, give a little air at night, and press down the glass firm in the morning. As soon as the rooting process is fairly commenced, leave a little air on, except in the heat of the day, and by-and-by leave it on constantly a few days before removing the glass. But you say, you have no bell-glass. Well, go to the cupboard, and borrow some ale-glasses or tumblers. "Oh! there will be such grumbling." Do, then, as I did with some of my first propagating. Get a stout hazel or willow wand, or any other piece of wood that will bend in a circle for a base; take two other smaller

pieces, from twelve to eighteen inches long; tie them at right angles in the middle; bend them there, so as to form a conical, circular top, and fasten the four ends, at equal distances, to the circular hoop; cover this frame-work with fine tissue paper, previously brushed with oil or grease, and then allowed to dry before being used, and you get a first-rate propagating *help*, that will require less shading during the day than glass, and more air when the days are cloudy, and during the night. Propagated in spring, pot as soon as struck, and they will make nice little flowering plants in the autumn. Propagated *now*, they had better remain in the propagating pots during the winter, or merely be shifted into a pot a size larger, without dividing them. If you can keep them in the window during the winter, so as to keep them growing and green, they will make nice plants by Midsummer, if repotted in spring. If stored past in a dormant state in winter, the fuller the pots are of roots the better, and they will make nice plants for the end of summer and autumn.

4. *General Treatment*.—I have left little room for this. Keep the plants in the window *now*, with plenty of air, until they begin to get shabby; mulch, and use manure-water judiciously; smoke, or wash, if you see the appearance of a fly; never let a withered leaf or a decayed bloom be seen twice. By-and-by, the plants will get a little leggy, the leaves will be so-and-so, and a few flowers at the points of the shoots may tempt you to keep them where they are until every flower is gone. But resist the temptation; turn the plant out-of-doors, in a somewhat shady place, for a few days, and then right in the sun, and this will harden and ripen the wood, unless you adopt with a few the standard or umbrella fashion, train to one stem, and in the shape of an acute or an obtuse-headed cone. Give no more water when out-of-doors than will just keep the plant from flagging. Strive to have almost every leaf off before they feel a frosty night. Before that frost is so powerful as to injure a bud get them under shelter—anywhere will do where the frost cannot reach them—and if there is no light, the cooler the better, so that there shall be no excitement to growth before March, or thereabouts. If the soil is moderately moist, and the pots were plunged in damp moss, or in saw-dust, &c., there would be little occasion for the water-pot during winter. If allowed to get dusty dry, the buds will break weak and irregularly in spring. If too wet, they will break gouty and irregularly. Before wintering, prune off a good portion of the more twiggy matter of the plant, but do not cut close to one, or even a few buds. To have a mass of early bloom, in such circumstances, it is necessary to have as many shoots as you want in the spring as equal as possible in point of strength, without being obliged to stop any, or only a few, of the strongest. If you spurred back in the autumn many of the buds would not break at all. As it is, when vegetation commences, it will often be necessary to damp all the stems, and lay the plant down so as to get it to break equally all over. I may mention that a blanket, sheet, or mats, or dry hay, &c., for protecting the tops of the plants in the winter, as mentioned by one of our correspondents, is a capital idea. As soon as vegetation commences sprinkle the heads; by the time the buds are half-an-inch in length the plants must be brought to the light, and slightly watered if they required it, shading them slightly in a bright day at first. When the shoots are three-quarters-of-an-inch long, repot them, by shaking away the most of the old soil, prune away any old roots, dip the remainder for a few minutes in a pail of water, about 65° to 70°, allow these to drain, and then repot in a clean pot of a similar size, or rather a smaller one than the plant occupied before—in the latter case resolving to give the plants another shift some six or eight weeks hence.

The saturating the roots with water is to prevent the necessity of soaking the new soil until the fresh roots are working freely in it. Until that takes place the plants will want the shade, in the heat of the day, of a muslin curtain, and the stems, or foliage, to be frequently refreshed with the sponge, or syringe. We thus get new shoots pushed from the old roots in the old soil, and then we cajole these shoots, by a relative action, to produce new roots in the new soil. We act exactly on the same principle as we do in striking a cutting. When the balance is getting restored, as the appearance of the plant will testify, we finally prune back, or rather thin out, the shoots that will not be necessary, and these are just the very thing for cuttings. By thus keeping up a young stock, the plants need never be more than two summers old. The young plants, either from spring or autumn striking, if wanted to come in after the others, must be pruned later and closer in the spring, be kept in the same or another window, be turned out-of-doors in April or May, with a little protection, such as a cloth thrown over them, and stand exposed by the end of the last-named month. They will make fine plants to bring in in the end of summer, when the older ones are past their best. Nothing will better pay extra attention, in the shape of cleanliness, and judicious manure-waterings, and surface-mulchings. After May, and right on to the end of September, air must be given, and gradually increased, to keep the plants bushy. Well supplied with water, and pans to stand in, after the middle of June, they will do as well outside the window as within it. In potting, if you are fortunate to have such turfy soil as I have recommended, I would keep spades and riddles at a distance; break or chop off a piece of the heap, reduce it to fragments with my fingers, having most of the pieces the size of peas, for a four-inch pot, and from that to walnuts for an eight-inch one, and when the specified proportion of gritty and manuring portion, if deemed necessary, were added, trundle it all, nicely incorporated, among the roots, and pack as firmly as possible. In using such soil see that it is not too dry. If it will adhere slightly, when grasped in the fist, it will do. If it leaves the marks of the fingers prominently it is too wet. What I have said, as to soaking the roots and not watering soon afterwards, applies to plants potted early in spring. Those potted in the summer may be soured directly.

R. FISH.

JOTTINGS BY THE WAY.

(Continued from page 342.)

TRENTHAM (the Duke of Sutherland's).—The lake in front of the house at Trentham is of considerable extent, and part of its borders reaching close to the hanging wood, which so greatly adds to the beauty of the view from the mansion. Through this lake the river Trent wound its way. This mansion is, then, situated on the banks of the Trent; and hence its name, Trentham—*ham*, or *holm*, meaning a dwelling. The river, in passing through the lake, deposited the muddy part of its waters, thus filling it up, and, in addition, whenever there was a flood, discoloured the water of the lake, so as to render it very unsightly. To remedy this, Mr. Fleming proposed the extraordinary expedient of changing the course of the river, and supplying the lake with clear water from the springs in the neighbouring hills. This startling scheme, after some delay, the Duke consented to carry into effect, and it is now completed. I saw the river flowing on its quiet, even way, in its new path; and I was informed, that the expense had been much less than had been anticipated. The lake is in the course of being cleansed out of the

deposited mud, and will then be filled with clear water, which will greatly add to its beauty, and, consequently, add to the beauty as well as salubrity of the place.

The kept grounds here have, partly in consequence of the change of the river's course, been greatly enlarged, and that very judiciously; so that the visitor, at every step, is meeting with fresh objects at hand to admire, and new views in the distance. Mr. Fleming has carried out the planting masses of shrubs of one colour with good effect, especially with the *Rhododendron*.

Of this charming tribe, so varied in colour, there is, at Trentham, an enormous number, and in particular situations may be seen a large mass of the white varieties—in another, a mass of purple, another of rose, another of scarlet. These, at the part where they come in contact, are judiciously intermixed, so as to soften and blend the two colours together. This attention to planting trees and shrubs, so as to give masses of breadth and colour, is a mark of the onward march of a higher taste in laying out and planting pleasure grounds; and such men as Mr. Fleming, placed in a position to be able to carry such novel views into effect, may be considered as the benefactors of landscape gardening, especially when backed by such intelligent and liberal possessors of large landed property as the present owner of Trentham.

In the pleasure ground there are several plants of *Cupressus thyioides*, which has proved perfectly hardy, the late severe winter having not injured them in the least. As this is a very ornamental species, the fact of its being hardy so far north as Trentham greatly adds to its value. Not far from these Cypresses I observed a fine plant of that rare Conifer, the *Pinus Banksiana*. It appears to be quite hardy, also, and is forming a handsome specimen. A remarkable shrub grows near to the same spot. It is a variety of our good, hardy, useful Box tree, and was named *Buxus spiralis*, from the spiral character of its branches.

In the conservatory there was pointed out to me a seedling Fuchsia of a most extraordinary character. The stem was eight feet high, and very stout; the leaves broad and large, and flowers very large indeed. As an addition to the ornamental plants for the conservatory it will be admirable.

Since I was here, two years ago, the plants in the conservatory have been greatly improved both in arrangement and training. They are all planted out in beds, (not one plant in a pot was visible) with paved walks between them, sufficiently wide to allow one to walk comfortably upon them. The pipes form the edging of these walks, and to hide them, hardy *Lycopodiums*, and other trailers, are planted. On these beds, the various shrubs suitable for the temperature of a greenhouse are arranged at such distances as to allow the outline of each plant to be seen distinctly from its neighbour; and, to prevent them growing into each other, the knife is freely used, and the pyramidal form, as much as possible, is given to them. By this pruning and forming, a much greater number, and, consequently, variety of plants, can be placed in the beds. Suspended from the roof I noticed a considerable number of ornamental baskets filled with trailing plants, the best of which was the *Ivy-leaved Geranium*, in two or three varieties. Thus hanging, they seemed to me to flower more freely than by any other mode of growing them.

At one end of this conservatory I observed a fine specimen of the *Trentham Scarlet Geranium*, a free-flowering, bright scarlet variety. For covering a pillar, or a wall, as in this case, this variety seems admirably adapted. A blank wall on one side of the house is covered with *Camellias*, in fine health, and full of buds for next season. This plant is also made use of as a covering for an arbour in the house. Its dark green

foliage make a shade, dark and impervious to the rays of the summer sun.

In another part of the gardens, there has lately been erected a considerable range of glass-house to cultivate stove and greenhouse plants in pots, and most admirably they are grown. Near the same place is an aquarium for stove aquatics, and a span-roofed, low house, of considerable length, for Heaths. The grand improvement, however, in a gardening point of view, at this place, is the covering the walls with glass; as Mr. Fleming remarked, these are not *glass* walls, but *glass-covered* walls. As I observed on a former occasion, the gardens at Trentham are in a low situation, with a cold, dry subsoil, and, in consequence of these unfavourable circumstances, the Peach, Nectarine, and Apricot, did not thrive as was desirable, nor produce good fruit. To remedy this serious defect, Mr. Fleming had a short length of wall covered with glass, that is, a framework of cast-iron was set upright, parallel with the wall, and about three feet from it. Into this framework glazed sashes were fitted and made, so as to slide within each other. The top, or space between the wall and this glass front, was covered in with a curvilinear roof, glazed; also from this roof, at wide intervals, Grapes are hanging down, the vines being planted and trained up for this purpose. This experiment has answered so well, that now most of the walls are covered, or going to be covered, in the same manner. I consider this invention, or, perhaps, I ought to say adoption, of glass-covered walls, an onward step in gardening.

The fruit houses were, as usual, in excellent order; grapes and pines abundant, and of first quality. I saw the *Barbarossa Vine* bearing several enormous bunches. I was assured this new variety is excellent, and will keep sound till the end of March. The readers of THE COTTAGE GARDENER will remember, that two years ago I described, as having seen here, standard Currants, trellised Gooseberries, dwarf Apples, trained goblet fashion, Pears trained downwards, &c. All these I found now thriving well and producing fruit most abundantly. I noticed, also, on the wall, some Peach trees grafted with last year's wood. The end of each scion was left long enough to reach into a bottle kept constantly full of water. This keeps the scion alive till it unites to the tree, and then the bottle is dispensed with. This is not new; I used bottles many years ago for the Camellia, but its application to fill up vacant spaces in a Peach or Nectarine is new.

T. APPLEBY.

ROSE CLASSIFICATION.

(Continued from page 304.)

CLASS 18.—TEA-SCENTED CHINA ROSES (*Rosa indica odorata*).—The difference between this class and the 17th, consists in the delicious fragrance of the flowers of this class. Like the China Roses, they are rather tender, and require protection from the severe frosts of winter when grown in the open air. The best sort of protection are loose branches of the Spruce Fir, or branches of the common Whin or Gorse, stuck in amongst them. They require light, well-drained soil, to keep their roots alive and healthy. For pot-culture, or for forcing, there are no Roses superior to them. Examples are:—

Abricoté, colour fawn, with an orange centre; large and double.

Adam, blush-rose; beautiful, large, and double.

Bride of Abydos, creamy-white, tinted with rose; delicately beautiful; large and full.

Devoniensis, a well-known, fine Rose, of a pale yellow colour.

Madame de St. Joseph, salmon-pink; large and full.

Niphetos, pale lemon, often snowy white; large and full.

Sofrano, bright apricot, in a bud state, changing to buff.

CLASS 19.—THE ISLE OF BOURBON ROSE (*Rosa indica Bourboniensis*).—This class may be distinguished by their stout habit, and thick, shining foliage; by the bright colours of the flowers, and fine-shaped blooms, combined with their autumnal season of blooming. They are very hardy and free in growth. Examples are:—

Acidalie, blush-white; superb; large and full.

Conice de Seine, vivid crimson, changing to purple; superb, and very double.

Coup d'Hebe, pale rose; form excellent; full, and very double.

Gloire de Paris, bright crimson; large and full.

Madame Angelina, delicately beautiful; rich cream, with a fawn centre; large and double.

Paul Joseph, dark velvety crimson; superb; large and full.

Souvenir de Malmaison, clear flesh, edged with blush; very large and double.

CLASS 20.—THE NOISETTE ROSE (*Rosa Indica Noisettiana*).—The Noisette Roses may be known chiefly by their blooming in large terminal clusters throughout the summer and autumn months; by their free growth, and large, rather than thin, foliage. A small section of this class, of which the *Cloth of Gold* is an example; are rather tender, and require to be grown against a wall. Examples of the hardy kinds are:—

Aimée Vibert, pure white; beautiful and full.

Cerise, rosy-purple, sometimes cherry; large and double.

Eclair de Jupiter, bright crimson, scarlet; large and double.

Miss Glegg, beautiful; pure white; large and full.

Pumila alba, white, small and double. (The two last are suitable for bedding).

The tender *Noisettes* have been produced by hybridising with the tea-scented Roses. Though rather tender, they are beautiful sweet Roses, and are well adapted for covering walls in sheltered situations. The following is a list of them:—

Clara Wendell, pale-yellow; large and full.

Cleopatra, yellow; large and full.

Cloth of Gold, yellow, edged with sulphur; large and double.

Desprez a fleur jaune, red, buff, and sulphur; variable; very sweet; large and full.

Euphrosyne, pale rose, and yellow; abundant bloomer; very sweet; large and double.

La Biche, fine, pale flesh; very large; and very double.

La Victorieuse, white, shaded with rose; beautiful; very large; and double.

La Paetole, fine; yellow; large and full.

Lamarque, sulphur-yellow, changing to white; very large and very double.

Mrs. Siddons, clear yellow; and very double.

Ophirie, nankeen and copper; distinct and full.

Similor, deep sulphur, changing to yellow; very double.

Solfatare, fine sulphur-yellow; large and double.

Yellow Noisette (Smith's), straw-colour; large and full.

These rather tender hybridised Noisettes are, as the reader will have observed, mostly either yellow, or colours approaching to it. They are all very beautiful; and for covering a warm wall, or planting in a conservatory to train against pillars, no Roses are so suitable. I have only now to give a few remarks on pruning, as our correspondent requested, but must defer it to another opportunity.

T. APPLEBY.

REMARKS ON THE SEASON.

IN a popular work like THE COTTAGE GARDENER, which is read by parties widely separated from each other, much good is done by occasionally recording the state of the weather, and the crops of various kinds, which differ much even in districts not so far apart; while, of course, those further removed, may, in certain cases, be widely at variance; and as it is always interesting to know how things go on at other places, I shall devote the present chapter to the detail of such peculiarities as the present season has furnished us with, and the success or failure of the various produce which may be traced to that cause; for though much is, doubtless, due to care, cultivation, and management, yet, Dame Nature exercises so much more powerful influence on the progress of everything in the vegetable kingdom, that I will restrict my remarks to such things as are supposed to be effected entirely by her, and report the result as if the ordinary means usually taken to obtain success had been put in operation, and the issue, whether for better or worse, due entirely to the vicissitudes of the season.

Commencing my observations with the Flower Garden, I may state, that in the district I write from the spring had been unusually wet, and though frosts have been both later and more severe in other seasons, yet the coldness of the ground, and the absence of sunshine, rendered vegetation much later than in the majority of seasons; while it is needless to observe the deluges of rain in early winter, with the severe weather we had at the end of February and March, completely destroyed many plants which had stood the two or three preceding winters, and which up to then looked likely to grow another season. In fact, the weather had been so mild through autumn, and up to the middle of February, that many plants considered very tender, had stood (certainly not unhurt) but unkilld, and some of them flourishing in a manner more like the early part of October than midwinter, only without their flowers; suffice it to say, that on the 10th of February I took cuttings from out-door plants, which had not the slightest protection, of *Mangle's variegated Geranium*, and some scarlet and sweet-scented kinds; the *Double Purple Senecio* and *Blue Anagallis*, with all the kinds of *Calceolaria*, and such *Verbenas* as had not been lost by the decay-causing rains when they had been growing thickly together. This last cause destroyed all the *Petunias*, and some other plants, including a great number of the *Geraniums*. However, isolated plants escaped, and many others, not necessary to mention, remained unhurt up to the period here noticed, when, it is needless to say, the setting-in of hard weather annihilated them completely; even the partial covering-up which I gave to some *Calceolarias* has seemed unable to save them from the severity of the season and the long confinement they had to endure under snow, so that when spring did set in, and the effects of winter could be fairly seen, it was found that scarcely a single plant of *Calceolaria* remained, while *Verbenas*, *Anagallis*, &c., remained but a mass of putrid matter; and even hard-wooded plants, not decidedly "hardy," in the common acceptance of the word, had also succumbed to the sharp usage of the icy king, so that large bushes of *Veronica Lindleyana* were destroyed, as well as *Coronilla* and *Cytisus*. One plant of the latter, ten feet high, and proportionably bushy, had just begun to expand its flowers in a rather sheltered part of the shrubbery, and gave forth promise of being a truly noble object, but it was, like many less aspiring objects, laid prostrate, so that but little remained of what is usually termed "bedding-out" plants, except a portion of a bed of *Nierembergia*, which, without any covering, save the snow, withstood the winter, and flourished afterwards.

If to this be added some large bushes of *Fuchsia Ricartonii*, which had stood some three or four years, and attained a large growth and thickness of stem, the number of plants not decidedly hardy, which escaped, was few; and in regard to these *Fuchsias*, it is only right to observe, that the tips of all the shoots were killed, and the shoots which have been produced the present summer did not flower any earlier than those from plants which had been cut down; but, as I have remarked the same on other seasons, I do not blame the present season as the cause of it, but only mention it in order to remove any erroneous impression that may be abroad of *Fuchsias* flowering earlier by their stems being preserved through the winter. It is almost needless here to state that they stood quite unprotected.

I may observe that the loss of hardy plants through the extreme wet has been less here than in many places; for even some plants of *Salvia patens* have survived when they had a sufficient covering of snow, or other matter, to save them from the frost; but this now belongs to the class of hardy herbaceous plants, that I can hardly enumerate it as an exception; but it is not in every place that the *Cuphea strigulosa* lived through, and in one or two beds we did not lose a plant, but these were very dry, and slightly sheltered. *Plumbago Larpenæ* was also unscathed, as well as the *Dielytra spectabilis*, the latter flowering beautifully afterwards; the former, of course, not begun to do so yet. With these observations, I therefore conclude my list of casualties in the flower-garden way up to the last spring, and shall now turn to the duty of recording the various notes of the present season, and its effects on flower-garden plants in general, as compared with the last and previous year.

I have said that the spring of 1853 was much later than usual, owing to the dull, wet weather, rather than to any serious amount of frost late in the season. This state of things had so retarded all tillage operations, and so neutralised it when it had been accomplished, that when the period arrived usually called "bedding-out time," the beds were in anything but a suitable condition to receive the plants; for, independent of the coldness of the ground from perishing rains, its surface had scarcely even been exposed to the action of frost or drying winds, so that the process of mellowing had been but little effected; while, on the other hand, the contrary effect had been going on, in spite of what efforts were made to arrest it; and many beds, which on other occasions were thought to be dry as dust and *workable*, were sour, unkind, and all but unmanageable; other work coming on at the same time necessarily restricted what might have been advisable here, to what could not absolutely be done without. The "planting-out," was, perhaps, a less careful matter than at other times; nevertheless, some little attention was paid; and when the ground refused to pulverise to that nice mellow state so necessary to the well-doing of plants in general, a small quantity of imported soil was allotted to each plant of a kind supposed to be favourable to its growth, and to "set it a-going." The appearance of dry weather at the time, and the possibility of its being likely to continue so for some time, rendered it advisable to hasten the work, lest the dry weather should set in before the plants had taken any hold of the ground, and which, on former years, we have suffered so much from. That this was not the case, has been proved by the succeeding deluges we have had; but it is only right to observe, that the period which was at all dry for anything like a whole week at a time was just the middle of May, when the planting-out was in course of operation, so that, so far as its utility was concerned at that important time, the weather was unpropitious rather than otherwise; and that it has poured, &c., since, will be seen by the list of failures, and partial failures with some few cases of more than ordinary success, all of

which I am, however, for want of space, compelled to defer until another week, when I will report the whole, with such comments as each individual section seems to call for; and hope others, more distantly situated, will record the same from their respective localities, in order to be able to compare notes, and benefit accordingly.

J. ROBSON.

CULTIVATION OF STUBBLE TURNIPS.

THE mode of management required for the cultivation of Stubble Turnips differs materially from that of the early sowings of Turnips after a fallow preparation, or, indeed, after those sown late as a second crop after Tares, Trifolium, &c.; for although, in many instances, the time for preparation of the land after green crops is very limited, yet it is still more limited when Turnips are intended to be sown as a stubble crop after Wheat, Oats, &c. Under ordinary circumstances, there being no time for cleaning, or otherwise preparing the land for this crop, it is desirable to select land clean, and free from weeds and couch grass; and it is also important that the driest and kindest land be chosen for it, in order that the Turnips may have the advantage of a kind, quick growth whilst the plants are young, and also that they might be enabled to continue their growth until the latest period in the winter, which they are most likely to do upon dry, warm, and sheltered land.

The stubbles first ready will be those of winter Oats and autumn-sown Talavera Wheat; indeed, it is the practice of some parties to sow this variety of Wheat in the autumn, for the purpose of appropriating the land to a crop of Turnips; but I cannot approve of the plan, being of opinion that Talavera Wheat is best calculated for spring sowing, and that when put in in the ordinary Wheat season it is less productive than most of the ordinary autumn Wheats.

Corn of any sort, intended to be followed by Turnips, should be mown or reaped very close to the ground, in order that as little stubble as possible may be left to impede the work of ploughing, harrowing, &c. It is likewise necessary that the crop should be tied into sheaves, and set up to dry upon a portion of the land, the remainder being then free and open for the plough to commence work.

This operation is best effected in the following manner:—When the corn is sufficiently ripe to be cut without loss, proceed at once, with as many hands as can be obtained, to cut and tie it; and when this work is done at so much per acre, a party of women or boys are set to remove the sheaves, as fast as they are tied, and place them upon every third land, or third portion of a given space—it being the work, and part of the contract of the company who cut and tie the corn, to set up the sheaves into stook upon that portion of the land set out for the purpose.

In this manner two-thirds of the land may be sown with Turnips before the corn is fit to remove from the field; and after the first day's reaping, or mowing, two-thirds of the land, from which the crop has been cut,

may be ploughed, harrowed, and sown, each succeeding day, until the whole of the field has been sown, except that portion whereon the corn is left to dry. When the corn is ready for carting to the stack, proceed as quickly as possible to clear the field, and sow the remaining portion of the land with Turnips.

Those who have never tried the plan of ploughing and sowing the land between the rows of corn in stook, may be disposed to think it is not worth doing, but having adopted the plan myself for some years past, the result has been that the portion of land sown before the carting of the corn, has, invariably, produced double the weight of Turnips, although the difference in the time of sowing has not been more than from seven to nine days.

When the land is dry, the portion first ploughed is softer and kinder, requiring but little labour to produce a fine and favourable tilth, so essential to the quick growth of the Turnip plant; the remaining portion, of a dry season, having been exposed to the sun and wind for eight or nine days before the removal of the corn, becomes hard, and requires more labour to reduce it fine enough for seeding.

I would observe, that the latest period at which Turnips may be sown as a stubble crop, with any chance of a useful produce, is about the 14th of August. This, however, applies to the eastern and southern counties of England, for this crop is hardly worth notice in the northern counties, and in bleak and exposed situations.

In manuring for stubble Turnips, the use of superphosphate is most desirable, its effect being notorious for inducing quick growth, and early maturity. Two cwt. of this manure, per acre, is a fair quantity, but one cwt. of Peruvian, or Bolivian guano, per acre, in addition, with about twenty bushels of ashes, may be used, if the land requires it.

It has been said that so unimportant a crop will not repay such an application of manures as I have here recommended; but it must be remembered, that it is a preparatory crop, and, therefore, whether succeeded by a crop of Barley, or other grain, this would receive the full benefit of any extra application of manure as well as the Turnip crop.

Turnips sown at this late period ought, of course, to be drilled at a less distance between the rows than all the early sowings; horse-hoeing being scarcely required, the rows may be placed at fourteen inches apart, and the plants set out at ten inches in the rows. It is, however, advisable, when this crop is sown unusually late, and intended for feeding late in the spring, to sow the seed broadcast; and in this case, the best manure is two hundredweight of guano per acre, sown broadcast also, and harrowed in; the plants in this case should be left very thick when hoed; it is sometimes best not to hoe them at all, but to constantly thin-out the plants by the use of drag or harrow. When the weather is very dry, and the seed not likely to vegetate regularly, it is best to use the water-drill; and I am inclined to believe that it would be the most advantageous mode

of drilling, under any circumstances, for this late crop.

In selecting a sort of Turnips for sowing after a crop of corn, it is most important to procure a quick-growing, yet hardy, variety, which throws plenty of leaf, and is of early maturity.

It is unnecessary to sow more than two pounds of seed per acre, for the fly, wireworm, and grub, hardly ever attack the plants at so late a period of the season. The only enemy of any consequence to contend with, is the small white slug, and the best thing to stop its ravages is an application of lime sown over the field, occasionally, early in the morning, or late in the evening. Two bushels per acre are sufficient for each application.

JOSEPH BLUNDELL.

SEA WEEDS.—No. 6.

(Continued from page 350.)

ORDER 4.—DICTYOLACEÆ.

"OLIVE-COLOURED, inarticulate Sea Weeds, whose spores are superficial, disposed in definite spots or lines."—*Harvey*.

1. CUTLERIA.

"Root a mass of woolly filaments; frond flat, veinless, somewhat fan-shaped, irregularly cleft; fructification minute tufts of capsules, pedicellate, containing several distinct granules. Named *Cutleria* in honour of Miss Cutler, a distinguished British algologist."

CUTLERIA MULTIFIDA (Much-Cut).—"On rocks and shells in deep water. Rare. Very rare in Scotland. Dredged in Lamash Bay, Isle of Arran."

2. HALISERIS.

"Frond flat, linear, membranaceous, with a mid-rib; root a mass of woolly filaments; fruit ovate-seeds, forming distinct sori or groups, mostly arranged in longitudinal lines. Named from two Greek words, signifying the sea and endive."—*Greville*.

1. *HALISERIS POLYPODIODES* (Polypodium-like).—"On rocks and stones in the sea. South of England; West and South of Ireland. Colour brownish-olive. Smell, when fresh gathered, very powerful and offensive."

3. PADINA.

"Root coated with woolly fibres; frond flat, rib-less, fan-shaped, marked at regular distances with concentric lines, fringed with articulate filaments, the apex involute; fructification linear, concentric sori, bursting through the cuticle of the upper surface of the frond, consisting, at maturity, of numerous obovate spores, fixed by their bases, each spore containing four sporules. Name invented by Adanson, who has not explained its meaning."—*Harvey*.



PADINA PAVONIA.—"On rocks, in shallow pools, at half-tide level. Annual; summer and autumn. This very

beautiful weed, so abundant on the shores of the Mediterranean, is rare on ours, and only found in the South of England. The fronds grow in tufts, from 2—5 inches high, and are all fan-shaped, which gives the plant a very striking appearance. The whole frond is marked with numerous concentric zones, and mostly covered with a whitish powdery substance on the under side; the margin is rolled back-wards, and fringed with extremely delicate reddish-brown filaments."—*Harvey*.

4. ZONARIA.

"Root coated with woolly fibres; frond flat, ribless, fan-shaped, entire or cleft, marked with concentric lines; the cells radiating. Name from the Greek word for a girdle or zone."

ZONARIA PARVULA (Very small).—"On rocks; colour olivaceous-green."

5. TAONIA.



TAONIA ATOMARIA (Dotted).—"Frond membranaceous, broadly wedge-shaped, deeply and irregularly cleft and lacinated; spores forming waved transverse lines, with intermediate scattered ones."—*Harvey*.

A rare and very beautiful weed, found on rocks in the sea. East and South of England. The specimen from which our plate is taken came from Devonshire. The rich shades of olive-green, zoned with the dark marks, in waving lines, composed of the spores, form an unusually beautiful object.

6. DICTYOTA.

"Frond flat, reticulated, membranaceous; root a mass of woolly filaments; fructification composed of scattered or

variously aggregated, somewhat prominent, seeds, on both surfaces of the frond. The name signifies network."—*Greville*.

Common. Summer. Varying much in colour and in the breadth of the fronds, which are from 3—12 inches long. The handsomest specimens I have seen were from the Isle of Man, a rich yellow-olive.

7. STILOPHORA.

"Root a small naked disk; frond filiform, solid or tubular, branched; fructification convex wart-like sori scattered over the surface. Name, from two Greek words signifying a point, and to bear, in allusion to the dot-like fructification."—*Harvey*.

STILOPHORA RHIZODES (Rooted).—"Common in the South of England. Colour yellowish-brown."

S. LYNGBYEL.—Generally obtained by dredging. "When fresh it is crisp and rigid, soon becoming soft. Colour olive-brown."

8. DICTYOSIPHON.

"Frond filiform, tubular, continuous, branched; root minutely scutate, naked; fructification solitary or aggregated naked spores, scattered irregularly over the surface. Name from two Greek words, signifying network and a tube."—*Greville*.

DICTYOSIPHON FENICULACEUS (Fennel-like).—Very common. The fronds are often many feet long, yellowish when young, of a rusty brown, and rather coarse, when old.

9. STRIARIA.

"Frond filiform, tubular, continuous, membranaceous, branched; fructification groups of roundish spores, forming transparent lines."—*Greville*.

STRIARIA ATTENUATA (Thin).—"Growing on other *Alga*. Rare. Found all round the coast. This plant is also a native of the Mediterranean."—*Harvey*.

10. PUNCTARIA.

"Frond simple, membranaceous, flat, with a naked scutate root; fructification scattered over the whole frond in minute distinct spots, composed of roundish prominent seeds, intermixed with club-shaped filaments. The name from *punctum*, a dot, from the dot-like fructification."—*Greville*.

1. PUNCTARIA LATIFOLIA (Broad-leaved).—"On rocks in the sea. Annual."

2. P. PLANTAGINEA (Plantain-like).—"Frond olive-brown, thin, lanceolate, attenuated at the base, more or less waved, entire, dotted."—*Greville*.

This weed, when young, makes very pretty specimens for the herbarium, the olivaceous tints are so rich and soft; when older it becomes darker, and does not adhere to paper.

3. P. TENNISSIMA (Thinnest).—"In the sea parasitic on *Zostera marina*."

11. ASPEROCOCCUS.

"Frond unbranched, tubular, cylindrical, continuous, membranaceous; root minutely scutate, naked; fructification scattered over the whole frond in minute distinct dots. Name from two words, rough and seed."—*Harvey*.

1. ASPEROCOCCUS COMPRESSUS (Flattened).—Rare. South of England.

2. A. TURNERI.—"On stones and the larger *Alga*, also in tide pools. Semi-transparent; pale olive."

3. A. ECHINATUS (Hedgehog-like).—Darker and smaller than the preceding. Common.

12. LITOSIPHON.

"Frond unbranched, cylindrical, filiform; fructification naked spores scattered over the surface." Name signifying a slender tube.

1. LITOSIPHON FUSILLUS (Dwarf).—"In the sea parasitical."

2. L. LAMINARLE.—"Growing on *Alaria esculenta* and *Ulva lactuca*." Dull olive-brown.

Dr. Harvey remarks, that there is great variety amongst the plants of this order. Some are simple flat expansions; in others the frond is a simple bag, closed at both ends; while others have a fan-shaped outline; some are hollow

and some are solid; and many of them are clothed with fine hairs, which reflect prismatic colours—this is especially remarkable in the beautiful *Padina pavonia*, which shows its love of sunshine by growing in shallow pools of warm temperature, and its fronds are twice the size in warm summers. May not we learn a lesson from this humble weed? The more it basks in the warm rays of the sun, the more it improves in beauty and approaches to perfection. The more humbly and closely we walk with God, the more we shall grow in grace and increase in the knowledge and love of the Saviour, the Sun of Righteousness. With respect to the minute works of God, Dr. Chalmers remarks, that "About the time of the invention of the telescope another instrument was formed, which laid open a scene no less wonderful, and rewarded the inquisitive spirit of man. This was the microscope. The one led me to see a system in every star, the other leads me to see a world in every atom. The one taught me that this mighty globe, with the whole burden of its people, and of its countries, is but a grain of sand in the high field of immensity; the other teaches me that every grain of sand may harbour within it the tribes and families of a busy population. The one told me of the insignificance of the world I tread upon; the other redeems it from all its insignificance, for it tells me that in the leaves of every forest, and in the flowers of every garden, and in the waters of every rivulet, there are worlds teeming with life, and numberless as are the glories of the firmament."—S. B.

(To be continued.)

BRAHMA POUTRA FOWLS.

IN your number of July 14th, you notice, that Mr. Nolan, of Dublin, had received some Brahma Poutra fowls from America, and that "he considers them a distinct race, although a subdivision of Shanghae; that they lay as many eggs, and as near as possible the size of Turkeys." You add, "As we entertain grave doubts on these points, we will say no more upon the subject."

Having some Brahma Poutra fowls imported direct from America, from Dr. Bennett and Mr. Burman, the principal breeders and amateurs of that country, I beg to offer my opinion and experience on the subject of their being a distinct race, in addition to the evidence of the American gentlemen who introduced them here.

When I first saw the Brahma Poutra fowls sent by Dr. Bennett to Mrs. Hosier Williams, and exhibited at the Great Metropolitan Poultry Exhibition, I thought (most erroneously, with many others) that they were cross-bred birds, but I am now convinced to the contrary, having seen the produce of several of the pairs imported, which are exactly like the parent birds to a feather; further confirmed by the old adage, "Like begets like."

Were they cross-bred birds, as at first supposed, their very peculiar and regularly-marked colouring (black and white) would be sure to be more or less predominant in their produce, for no party-coloured bird is so certain of sporting or producing too much of the one colour or the other; whereas, the fact is, all their chickens are beautifully marked like the parent birds, almost similar to the Silver-Pencilled Hamburgs. I quite, therefore, agree with Mr. Nolan, that they are a pure and distinct race, and that they will be a most valuable addition to our poultry yards; they are larger and heavier than the Shanghae, have all their good qualities, are better layers, have more flesh on their breasts, but, not having tasted any, cannot say how far their flesh is white, juicy, and well-flavoured.

As I have said before, there are a few more Brahma Poutra's beside my own in England, I shall, therefore, be much obliged to those who possess them to be so good as to give us their opinion on their birds, and have no doubt that both you and many of your readers will be equally so.

Dr. Bennett, I think, presented Her Majesty with a pair. Dr. Gwynne, of Sandbach, Cheshire, has some; also, Mr. Bowman, of Penzance; and Mr. Paul Garbonati, 385, Oxford Street, London. To the latter gentleman I am much obliged for valuable information on the subject, he having been in communication with Dr. Bennett, and, I

believe, other American amateurs.—HENRY GILBERT, *Kensington*.

[We shall most readily insert any communication of facts relative to these birds. At present our opinion that they are cross-breds, or a variety of the Shanghae, remains unshaken, and the variations in those exhibited at the London Summer Show strengthens our opinion. Still, whether cross-breds, or a distinct breed, if they have permanent good qualities, we shall be glad to publish the result of any one's experience concerning them.—ED. C. G.]

You state, in your Journal of the 4th instant, that the chickens of Brahma Poutras vary from their parents, and the parents are not uniform; that Mr. Rawson's widely differ from Dr. Gwynne's; and Dr. Gwynne's chickens are neither like their parents, nor like those exhibited by Mr. Sheehan.

I certainly agree with you, that Mr. Rawson's birds widely differ from Dr. Gwynne's. Dr. Gwynne's and my own birds are pure *Brahma Poutra fowls*, but as to any other birds that were in that exhibition, called Brahma Poutras (except a pair of chickens, the property of Mr. Jones, pen 19, extra class), I should be sorry to undertake to say what they were.

As to Dr. Gwynne's Brahma chickens not being like their parents, that is a mistake, for they are exactly alike, and so are my chickens precisely like the old birds. You will please to understand that Dr. Gwynne's parent birds were not at the exhibition; whereas the remarks read as if a comparison had been made between the Doctor's chickens and their parents.

You state that Dr. Gwynne's Brahma chickens were not like those exhibited by myself. This is an error; they are as much alike as any chickens possibly can be, so much so, that I question if any one could pick out the Doctor's from mine if they were all running together.—W. B. SHEEHAN.

[All that was meant to be conveyed by the comment on the 4th, is that the old and young Brahma Poutras exhibited are strangely varying, if all are Brahma Poutras. We are aware that Dr. Gwynne's old birds were not at the exhibition, and that the young ones there do, in his opinion, resemble their parents; but we are also aware that in his opinion they are only a variety of the Shanghae.—ED. C. G.]

WHEN I saw, in your notices to correspondents, a fortnight ago, Mr. Nolan's statement that Brahma Poutra fowls' eggs were as nearly as possible the size of those of a turkey, it was so contrary to my own experience with several hens of the breed, that I imagined that possibly, when he wrote, his birds had only just arrived, and had been presenting him with a few double-yolked eggs; the consequence, probably, of a too stimulating diet, after the exhaustion induced by the long voyage; and I thought it not unlikely, that when they had recovered their normal condition of laying, you might have to contradict this interesting piece of intelligence by another communication from Mr. Nolan. So far from such a contradiction, however, I was not a little startled at finding, in your present number, a similar assertion by the same gentleman, respecting the eggs laid by her Majesty's gray Shanghaes. He says, "Had you applied to any of the Royal Household, you could have been informed that the Royal table has been furnished with Brahma Poutra eggs since December last, and that their size, and that of their eggs, is as near as possible that of our ordinary turkey. I know it by experience. In this particular, they are a decided improvement on the Cochins." I do not know what may have been the nature or extent of Mr. Nolan's experience of the Queen's Grays, nor of his correspondence with the Royal Household; but I beg to assure him, that the above assertion is quite incorrect, so far, at least, as regards the size of the eggs laid by these particular birds. I happen to have been favoured with some of these eggs, in exchange for some from my own Brahma's, which, although said to be from a different strain, are, with her Majesty's birds, I am well assured, from the only strains in America of any repute under the titles of Gray Shanghae and Brahma Poutra. The eggs sent me (and as they were sent at three different times, with an interval of a few weeks between each, I may fairly presume I had some from most of the hens in question) differed neither in size nor appearance from those of the more common varieties of Shanghae

hens; and with regard to my own birds, although, when as pullets they commenced laying, their eggs were certainly somewhat larger than the average of Shanghae pullet's eggs, they did not, owing, probably, to incessant laying from the time they commenced, increase in size, as is often the case with other varieties; and they were never in so marked a degree larger than the usual run of my other eggs as to entitle the birds to the marked distinction claimed for the breed, on this score, by Mr. Nolan and some American dealers; indeed, I have had exceptional birds of the black, and more particularly of the white, varieties, which have habitually laid larger eggs. There is a large, lazy fowl, of a nondescript character, and, I believe, of mixed origin, well known in America as the Gray Chittagong. This fowl, though an indifferent layer, is said to lay unusually large eggs. May not Mr. Nolan's birds be of this genus? Such a circumstance is not very unlikely, as, from all I hear, some of the United States poultry fanciers are not behind others of their countrymen in doing "smart" things by unwary purchasers, and particularly in foisting as genuine birds that are not; and the demand for Brahmas and Gray Shanghaes being very great, it may not be always convenient to supply specimens of the strains most in estimation. I suggest the possibility of this in Mr. Nolan's case, simply from the alleged size of the eggs laid by his birds being so much larger than those of the most approved Brahma fowls, as I shall be happy to convince him by sending him a few, both from the Queen's birds and my own, which have proved failures in the hatching. At any rate, and without any uncharitable wish either to impugn Mr. Nolan's veracity, or to prejudice his birds, I am quite of opinion, that the large size, and striking beauty of the plumage of the best strains of these novel members of the Shanghae family, will, with the other good qualities common to them and all good varieties of the same family, sufficiently recommend them to the notice of amateurs, without resorting to the very questionable expedient of courting for them an unreal celebrity, by assigning to them qualities which they do not possess.—W. C. G.

I enclose my full name; in case Mr. Nolan should request to be informed of it.

POTATO CULTURE.

As your journal contains all the most useful and economical hints to cottagers and others in the cultivation of their produce, I venture to send you the result of an experiment (although, perhaps, already known and employed) with regard to early potatoes. I dug the walnut-leaved, and an early round potato, somewhat like "Foxes," the beginning of this month (July), grown in the open but sheltered ground, and instead of throwing away the haulms I replanted them, *i. e.*, those which had even the most minute tuber, say the size of a pea, left upon them. I simply laid them in the trench formed between the two adjoining rows of potatoes, and threw the earth over them; they remained about three weeks, when, on taking them up, I found a very fair crop of tubers had been reproduced, many fully equal in size to the largest taken on the first digging.

I am not prepared to say that in a very dry season this result would have been attained, but this year I have undoubtedly had a most successful harvest from the replanted haulms. Your cottage friends who sell, perhaps, their earliest sorts of potatoes, would find it worth the trial, as they could keep up, by this means, a second supply for their own table.

By laying the haulms in the trenches, and covering with earth from the ridge, the ground is levelled, and there is no reason why cabbages should not be planted where the ridges first existed, at the same time deriving the benefit of the manure left by the potatoes.

P.S.—Some of the haulms had tubers left on them purposely, say as large as a musket ball.—BRYNADDA.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

GREENHOUSE VINERY (*Co. Cork*).—In reference to previous directions, page 172, we add, in reply to your last note, that *scantling* for rafters should be five inches by three inches. Scantling for front uprights, three inches by two inches; for sash bars, three-quarters-of-an-inch by two inches, tapered off to a quarter-of-an-inch in width, inside the house; but the nearest carpenter will tell you all about it. The cheapest mode is to have all the wood prepared by machinery. The top lights had better open, unless you have ventilators, either to slide or move in pivot hinges. The wood for the frames may be two-and-a-half inches, by one-and-a-half inches, and stronger if you like. The *pipes* should go all round. If there is a difficulty, owing to the doors at the ends, have the heating apparatus at one end; have a letter **T** flow and return pipe from the boiler, which would bring the pipes above ground at the sides of the first door-way, and then, traversing the space under the shelf, it could go as far as the other door, and then return. If even this was not suitable, you might place your heating power under the central platform. But hot-water fitters, who know what they are doing, would have no difficulty in either case. If the central platform of four feet is too narrow, add one foot to it, by making the shelves eighteen inches round the front. This is all a mere matter of taste, and to be regulated by the size of the plants you wish to grow.

MOLES BURROWING (*An Old Subscriber*).—They are fond of going often and often through the same runs, and one run is almost as good as another for setting a trap in. One traversed, this season, some hundreds of feet under a wall, got underneath large flag stones, and underneath foundations, and at last luxuriated in a Peach-house, where, at length, he was snugly caught. We know of no other mode.

REN CURRANTS ON SOUTH WALL (*Ibid*).—These are affected by honey dew. Any other aspect would have been better. A thorough and forcible application of the syringe, or garden engine, would have been the remedy.

OLD NEGLECTED GARDEN (*R. H. G. M.*).—Never give us the trouble to refer to indexes if you can help it; always state the page. It requires a great amount of time to answer queries, even when correspondents state their views and wants so as to give as little trouble as possible. The *Peach*, *Plum*, and *Pear-trees*, will want root-pruning in October. *Raspberries*, give now some soakings of manure-water to, and a good mulching of rotten dung, which will give you strong canes and good fruit next season. This season we have lost many canes by spring frosts. *Strawberries*, in a deep, rich soil, give plenty of watering in summer, and *thin* enough to have the buds ripened in autumn. *Gooseberries* and *Currants* seem also to be in want of more genial nourishment; very likely the bushes are too thick, or not sufficiently taken with the ground. If you want fine, large kinds, see the advertisements of the Lancashire kinds, which seem to bid defiance to every one else. For ourselves, we use chiefly the *Early Sulphur*, the *Champagne*, the *Keen's Seedling*, and the *Warrington*, for *Gooseberries*; and the *White Dutch*, and the *Dutch Red*, and *Grape Red*, *Currants*. The *Ruby Castle* is also a good one. The *Pear-trees* on the trellis will be all right by-and-by. We have little notion of making stations of stiff yellow clay and stones, but would choose the latter rather. As to the arrangement of the ground, instead of having the fruit scattered, as now, we would collect it in the department nearest the entrance from the flower-garden; and at the south side, near the pigstye, we would have all our *Sea-kale*, *Asparagus*, *Rhubarb*, *Artichokes*, *Horseradish*, *Herbs*, &c. This could be separated from the rest by a row of low standards, or a trellis, where now you have the dotted line 1. You could then carry on the walk from the stable-yard, right across, and then, from near the middle, marked N, take another walk to the south side, or take a walk round the piece, leaving a border all round against your neighbour's wall, and against the hedge on the opposite side. Had you not made some of the walks, from what we see of the place, we would have taken a main walk right across from the entrance from the flower-garden, and then another, letter **T** fashion, down the middle of the longer, but narrower part; and then we would have had small walks for the side borders, on the walk from the stable-yard, and the one leading at right angles from it. You could increase your espalier room with good effect, and if you arched these walks over with apple and pear-trees, they would look well, and thrive well.

SNAILS AND SLUGS (1001).—These are not "plagues," but natural enemies to Larkspurs, and all other green things on the face of the earth; and you might just as well have written to Lord Hardinge, as to any gardener or editor, for information about how to deal with such. To keep up the *national defences* of soot and lime, all round the coast, in such a season as this, would require a man, or rather two men, one for the nights, and one for the days, going round and round, and laying down the powders as required, for as soon as the next shower was over, the effect of every *train* would be over likewise. Mr. Barnes had given sufficient instructions for the destruction of all the snails and slugs in Europe, in our previous volumes. We, ourselves, have proved his plans this very season, and after killing many thousands of these quiet, harmless-looking creatures, all those that infected the gardens on each side of us ran in to take their places, and their leave of this world, almost at the same time; and if more come they must go the same road, for in our warfare we give "no quarter," and that is the only sure and certain way of getting rid of snails and slugs.

HYBRIDISING GERANIUMS (*Ibid*).—Here we can be of service to you. We had hoped that THE COTTAGE GARDENER had put down the pedantry and mischief of the camel-hair brush doctors for ever; but

suppose you had crossed *Dobsonii* with the pollen of *Basilisk*, by the best camel-hair brush that ever was made, that brush was no better than a fox's brush for the rest of the season, or rather for the rest of your lifetime, unless you kept it in boiling water, or in spirits of wine for a certain time, to kill all the pollen of *Basilisk* that stuck to it, before you could calculate on the next cross. All pistils do not become glutinous when ready for the pollen; in the *Rhododendron* and *White Lily*, very much so; in the *Geranium*, never. If you look at a *Geranium* flower just opening, you will see the pistil all in one; a few hours after that it begins to divide at the point, into five divisions, and, finally, each division rolls back, so as nearly to embrace the style; in that state it is fit to receive the pollen for one, two, or three days, according to the state of the weather. When the pollen parent is scarce, take only one stamen, and dust all over the fine turned parts their whole length, and the work is finished. When we have plenty of flowers, we pull one off for the pollen, cut away the petals, and apply all the anthers at once. Thus about eight or ten flowers can be crossed in one minute.

ROSES (Verax).—We can suggest no remedy for the want of colours in your *Tea* and *Noisette* Roses, which, we think, is caused by so much wet and want of sun. Your *Cloth of Gold*, 25 feet high, with trusses of 18 and 20 flowers each, is just as it should be. We murder half our Roses by too much cutting. Can you not turn it right or left, or back on itself, horizontally, rather than cut it at 25 feet, which is not a quarter of the space it will fill, and ought to fill now that you have allowed it so much strength? *Jean Desprez* tree rose—if you mean a standard, it ought to be pruned in the spring, like a hybrid China; that is, the oldest wood should be thinned out, very weak branches cut away altogether, and the rest left at full length, or merely taking off a few points to regulate the shape. It is during the summer that such roses ought to be pruned, by stopping them occasionally. The best time to prune the *Persian Yellow* is just at the moment it has done flowering, and at no other time; the same as with *Rhododendrons* and *Azaleas*, then you can cut it when you like, so as to keep it to any shape you please.

HOLLY HEDGES (Ibid).—It is not at all good practice to plant hedges of Holly with plants five or six inches high, unless in dressed ground, where no mud is allowed; but now is a very good time to plant them, and so on to the end of September.

BEES (Rusticus, A. B.).—"About the middle of June a strong hive swarmed, and was hived in my absence, and after two or three hours appeared to return to the hive. The next day we observed about fifty or sixty bees all day long clustering on the grass near where the swarm had alighted. On examining the spot, I found what I believe was a dead queen bee—the hive to which the bees were supposed to return was as full of bees as before. Is it likely that the queen bee was killed by accident, and that the bees, in consequence, returned to the hive? I put a cap, or 'super,' on the original hive, with some guide-comb, and the bees worked into it well. In about a fortnight the same hive swarmed again, and the swarm settled in two clusters, one much larger than the other. The larger one I hived in a new hive, and the other into a hive full of old comb, and both settled very well till evening, when the bees left the hive full of comb, and joined the other, which continued to settle and work very well. What was the cause of their settling at first in two sets? Was there a queen to each? If so, why should the bees desert the hive full of comb, and join the other? A few days after, when staying with a friend, a hive of his swarmed at two o'clock, which I hived, with some trouble, from a lofty branch, and I left them well settled: it was a very large swarm. After they had been hived about twenty minutes, a neighbouring hive swarmed, and settled down on the chair on which I had set the first swarm. I swept the main body into another hive, and set this hive close by the other, that the bees might ascend, which they did in great numbers. I then set the first hive on the ground, but in an hour or two I found that the bees were gradually leaving the second hive, and drawing into the first, which was quite full, though it was a very large hive. At night, the bees all drew up into the hive; but for several days after, even though we put an 'eke' under the hive, the bees clustered very thickly on the outside, and all round the base of the hive. The weather was cloudy, but close and warm. There was no fighting of the bees, and no dead bees about. What became of the two queens? Was one killed? Each swarm was very large; but in July, I thought it a happy junction. When I came away, the bees were still clustering outside, though there was much rain, and the weather was much cooler. Another hive of mine, on which I put a cap, worked up well into the cap, but swarmed in a week or ten days after." The queen, in all probability, was old, and not able to fly, and died from cold. It was the east that came out in a fortnight, and with a young queen; it is very usual for two, or even more, queens to go out with a east. Their leaving the hive with comb might arise from its having had bees die in it, or from moths. It is very common for two swarms to join when coming out the same day; it is, therefore, advisable always to remove a swarm from the place in which it alighted within five minutes after its being hived. The bees clustered outside the hive from want of room. One of the queens was killed.—J. H. P.

SPARROWS (A Subscriber).—We never advise poison for destroying either these or other animals. The small spring steel trap, or gin, used for mouse-catching, if a hard crust is tied on to the fall, catches them readily. We had dozens destroyed thus this summer.

EXHIBITING POULTRY (P.).—It is one of the usual conditions, that the fowls exhibited shall be the property of the party exhibiting them; but there is no such condition in the regulations of the Royal Agricultural Society's Show at Gloucester, consequently, Mr. M. shewing, in his own name, fowls belonging to Mr. A., committed no offence.

DISEASED GRAPES (G. M.—x).—The Grapes were destroyed by the white Mildew (*Oidium Tuckeri*) which has been, and is, ravaging the vineyards of Europe, as well as the vines in our greenhouses and stoves. The only remedy is flowers of sulphur. We know a greenhouse severely attacked, but the Grapes are saved by holding under each

bunch a plate of the sulphur flowers, dipping the fingers and thumb into the sulphur, and rubbing between them each berry.

DISEASED MIGNONETTE.—*Mr. H. Rew*, Gardener to the Earl of Caledon, writes to us as follows:—"The first year that the potato disease made its appearance in this country (the North of Ireland) I lost, in the month of June, nearly all my *Mignonette*; the potato disease appearing in the middle of July, with a disease so rapid in its effects, that plants in robust health were destroyed in 24 hours. I enclose a plant affected with the disease. My attention was particularly directed to it this season. I first observed the *Mignonette* attacked on the 20th of June, and on the 24th of July, the Potato leaves in the garden were affected with the black spot on the upper surface, and the white mildew underneath, which, I am sorry to say, is quite general through the Potato fields in this neighbourhood. Should it prove general, it might be of some service having such a warning; as it would enable many a one to plant Cabbages, or other vegetables, between their Potatoes, who might not have the opportunity to do so in July. Should you detect any disease, and know a remedy, you would greatly oblige by inserting the same in *THE COTTAGE GARDENER*."—*Mignonette* is very liable to gangreened roots; but the disease has no similarity to the Potato Murrain, beyond the fact, that both the diseases are most frequent and most severe in seasons when excessive wet occurs during the hottest season of the year. Therefore, so far, when one is prevalent, the other may be anticipated. The decay of the root of *Mignonette*, however, will occur even in the driest season. In soil containing limy rubbish we do not think we ever knew it to occur.

DISEASED HAMBURGH COCK (W. L. T.).—The swollen comb, and eyes blinded with rheum, are symptoms of roup. Separate him entirely from your other fowls. Wash his head and eyes, once or twice daily with milk and water, and give him every morning fifty drops of iodide of potassium. Keep him in a dry, moderately warm situation.

MARKET-GARDENING (S. B. B.).—We are not aware of any publication on this subject. Can any of our readers furnish us with some essays on combining "Farming with Vegetable-growing for Covent-Garden?"

SUCCESSION CROP (One who is no Gardener).—Take up your Potatoes at once, and plant Scotch Kale and Brocolis. In September, plant Cabbages for spring use.

WILLIAM ADAMS (C.).—The stamps are received.

OLEANDER SCALE (Pecchia).—Brush the Oleanders all over with a mixture of soft-soap, 2 lbs.; flowers of sulphur, 2 lbs.; tobacco, 1 lb.; and a wine-glass of spirit of turpentine. Mix the turpentine, soap, and sulphur, into a paste, with warm water; boil the tobacco for an hour in more water, in a covered saucepan; strain; mix with the soapy mixture, and add water enough to make five gallons. Do not cut down the plants.

BEES (Ibid).—"Having a Hive (full of Bees, &c.) which requires something done to it, I wish to drive them into another, according to the directions given in *THE COTTAGE GARDENER* by a "Country Curate." Should I do so immediately, or as soon as the drones have been killed, or wait until quite the autumn; and should I put any of the comb into the fresh hive with them? I intend, also, persuading some of my poor neighbours to let me have their bees out of the hives which they are going to plunder. If I put two or three lots of them into a hive together, will they live through the winter without having any comb in the hive, but merely with my feeding them as described in *THE COTTAGE GARDENER*, volume 6, page 311; and should this be given in a liquid state, and at the top or bottom, and all at once; or would Barley-sugar be equally good for them?" Drive your Bees as soon as the drones are killed. Put none of the combs into the fresh hive; you cannot secure them firmly. Feed them liberally, and they will make combs very quickly; give the food in a liquid state, and at the top of the hive; give two or three pounds at a time, according to the size of your feeder. For making the syrup, see *COTTAGE GARDENER*, volume 6, page 311. Barley-sugar would not do for this purpose; the stock must be made to weigh 20 lbs. at least.—J. H. P.

RABBITS (G. Everton).—A dog having the range of your garden might keep them away; but the best remedy is to exclude them by running wire netting round within your fence.

POULTRY QUETRIES (F. J. B., Devon).—*Mr. Bailey's Fountain* is as good as any, but dear; the smallest, we think, 8s. 6d. The cheapest and simplest contrivance for water is given at p. 135 of "The Poultry Book." The best *Poultry Mark* is to file a notch or notches on the beak. Your previous letter was not received. Are you sure it was sent?

NAMES OF PLANTS (W. X. W.).—Your Trefoil is *Trifolium fragiferum*. The Solanum-like plant is the "Deadly Nightshade," *Atropa belladonna*. (*D. G. C.*)—1. *Erodium Richardi*. 2. *Rumex sanguineus*. 3. *Baptisia Australis*. (*T. M. W.*)—*Agathosma ciliata*. Send the moth to us at Winchester. The other did not reach us. (*F. G. W.*)—1. Some species of *Habrothum*. 5. Probably *Mesembryanthemum pomeridianum*. We cannot tell Florists' Flowers from mere single flowers and leaves. (*W. P. L.*)—*Liatris spicata*, a very desirable, hardy, herbaceous plant, from North America.

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WEEKLY CALENDAR.

M D	W D	AUGUST 18—24, 1853.	WEATHER NEAR LONDON IN 1852.						Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.								
18	Th	Six-striped Rustic; woods.	29.862—29.741	74—52	W.	—	52 a. 4	15 a. 7	rises.	☺	3 36	230		
19	F	Black Neck; moist woods.	29.930—29.909	70—55	N.	—	53	13	8 a. 4	14	3 22	231		
20	S	Sun's declin., 12° 25' N.	30.074—29.991	64—57	N.	03	55	11	8 24	15	3 8	232		
21	SUN	13 SUNDAY AFTER TRINITY.	30.205—30.128	72—60	N.	—	57	9	8 40	16	2 54	233		
22	M	Pear Skipper; chalky pl.	30.242—30.213	72—53	W.	—	58	7	8 55	17	2 30	234		
23	Tu	Black arches; oaks.	30.260—30.195	72—55	N.E.	—	v	5	9 11	18	2 24	235		
24	W	St. BARTHOLOMEW.	30.168—29.995	71—55	S.W.	05	1	3	9 29	19	2 8	236		

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 72.1° and 50.3° respectively. The greatest heat 92°, occurred on the 18th in 1842; and the lowest cold, 32°, on the 21st in 1850. During the period 104 days were fine, and on 78 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 334.)

CHEIRANTHUS. THE WALL FLOWER.



GENERIC CHARACTER.—*Calyx* converging, compressed; leaves oblong, concave, erect, deciduous, two opposite ones protuberant at the base. *Petals* reverse-egg-shaped, spreading, entire, or slightly notched; claws erect, the length of the calyx. *Stamens* with filaments awl-shaped, parallel, simple, distinct, each of the two outermost, or shortest, embraced at the bottom by a nectariferous gland. *Anthers* erect, oblong-arrow-shaped, acute, of two linear lobes. *Germs* line-like, compressed, a little swollen at each side, the length of the stamens. *Style* short, nearly cylindrical. *Stigma* either of two thick spreading lobes, or large, round, and slightly notched, permanent. *Pod* line-like, compressed, two-edged, rather convex at the sides, mostly with an elevated, longitudinal, central line; valves straight; partition membranous. *Seeds* ranged alternately, in a single row, egg-shaped, compressed, slightly bordered at the summit, and often at one side also; cotyledons accumbent.

CHEIRANTHUS FRUTICULOSUS: Wild Wall-flower; Wall Gilliflower; Yellow Stock Gilliflower; Winter Gilliflower.

Description.—It is a perennial. *Stem* shrubby, erect, bushy, branched in a determinate manner; *branches* angular, leafy, hoary with close, bristly, silvery hairs, chiefly directed downward, like those on both sides of the *leaves*; though some point the contrary way, on the *leaves* as well as *pods*, being perfectly distinct from the others, nor is there any forked or stary down to be found. *Leaves* crowded, stalked, spear-head-shaped, acute, almost invariably entire; the lowermost, if any, slightly toothed; all deep green, with more or less of a minute silvery hoariness, especially at the back. *Flowers* in terminal clusters, sweet-scented; their *petals*, always of a uniform bright golden yellow, not stained with brown or blood-red as in the garden *Cheiranthus Cheiri*, though the *calyx* is purplish. *Pods* erect, one-and-a-half or two inches long, covered with close hairs chiefly, if not altogether, pointing upwards; each valve marked with an elevated central line, often vanishing about half way up. *Style* about a line in length in the flower, rather more on the ripe pod, stout, angular, a little bristly, crowned with the cloven *stigma*, whose lobes are finally brought close together. The *seeds* are flat, with a narrow, membranous, deciduous border at one side, as well as at the summit, of each.

Places where found.—Old walls, roofs, and lime-stone rocks.

History.—It is the *Viola lutea*, or Yellow Violet, of Gerard who describes it as growing “upon brick and stone walls, in the corners of churches everywhere, as also among rubbish and such other stony places. They flower for the most part all the year long, but especially in winter, whereupon the people in Cheshire call them Winter Gilliflowers.”

This clinging to us in places and seasons which decay marks as its own has always rendered the Wall-flower the emblem of fidelity in misfortune; a virtue so admirable, as to have raised this flower to a permanent place among the flowers carried at festivals, and hence, probably, the generic name from *cheir*, the hand, and *anthos*, a flower. The same habits have rendered this flower the especial favourite of Poets, from Herrick down to Delta. Many are the beautiful outpourings of their verses which crowd upon the memory, and we must quote from them a few stanzas.

To me thy site disconsolate,
On turret, wall, or tower,
Makes thee appear misfortune's mate,
And desolation's dower.

Thou ask'st no kindly cultured soil
Thy natal bed to be;
Thou need'st not man's officious toil
To plant or water thee.

Sown by the winds, thou meekly rear'st,
On ruin's crumbling crest,
Thy fragile form; and there appear'st,
In smiling beauty drest.

There, in thy bleak and earthless bed,
Thou brav'st the tempests strife;
And giv'st, what else were cold and dead,
A lingering glow of life.

So sang the Quaker bard, Bernard Barton, but Herrick, the Elizabethan poet, taking a still wilder flight among “the creation of flowers,” tells us that it is only an adven-

turous maiden changed to this form, who was killed in endeavouring to steal an interview with her lover—

"Up she got upon a wall,
'Tempting down to slide withal,
But the silken twist untied,
So she fell, and bruis'd, she died.
Love, in pity of the deed,
And her loving, luckless speed,
Turned her to this plant, we call
Now, the *Flower of the Wall*."

Herrick and Barton are among the dead, and we were about to say—now, for what a living poet says—but we remember that he, Delta, is also gone before, and that the flower of which he thus sings is above the grave of him who thus addressed it:—

Sweet Wall-flower! Sweet Wall-flower!
Thou conjurest up to me
Full many a soft and sunny hour
Of boyhood's thoughtless glee;
When joy from out the daisies grew
In woodland pastures green,
And summer skies were far more blue
Than since they e'er have been.

* * * * *
Rich is the Pink, the Lily gay,
The Rose is summer's guest,
Bland are thy charms, when these decay,—
Of flowers first, last, and best!
There may be gaudier in the bower,
And statelier on the tree;
But Wall-flower, loved Wall-flower,
Thou art the flower for me!

—(Smith. *Withering*. Gerarde.)

SOME time since we replied to a correspondent that we did *not* agree with him in thinking that the Potato Murrain, Vine Mildew, and some other phenomena which he mentioned, are "signs that the world is growing old." We have now before us another letter from the same respectable and respected correspondent; and he asks whether we do not "think that fungoid diseases are on the increase?" We think they are; but we must leave for others to answer whether it is a chastisement like that spoken of by the prophet—"I have smitten you with blasting and mildew;" "And in all vineyards shall be wailing."—(*Amos* iv. 9; v. 17).

Even if it be a visitation for our sinfulness, still, as in these days effects are wrought out by natural means rather than by direct interpositions, it will not be useless to point out what are, probably, the causes of the increase of fungoid diseases in vegetables.

First among these causes are the increase of moisture in the air and soil, and a decrease in their temperature during the growing periods. It is quite true, that taking the average of the entire year no such changes are perceptible; but if the growing period, by which we mean from April to June, both inclusive, be taken, then such an increase of moisture and decrease of temperature will be found apparent. We have not all our notes and references; but let us take one town, Liverpool, for example, of which we have the meteorological returns since 1843, and we shall find that it has had since no April so warm as that of 1843, and no May or June so warm, except in two years, and those years were 1847 and 1849: years, if we remember correctly, in which fungoid diseases much abated.

The following table shews the average temperature in the three growing months of every year since 1843:—

LIVERPOOL.

		APRIL.		MAY.		JUNE.
1843	...	53·0°	...	55·0°	...	62·0°
1844	...	47·2	...	52·2	...	58·0
1845	...	50·2	...	54·4	...	59·1
1846	...	50·2	...	51·5	...	59·2
1847	...	50·0	...	58·5	...	70·5
1848*	...	45·2	...	54·8	...	58·4
1849	...	50·1	...	58·9	...	62·4
1850	...	43·8	...	53·5	...	57·0
1851	...	46·2	...	51·6	...	57·9

* This year the temperatures are the averages at *Manchester*, we having no returns from Liverpool that year.

If any one will follow out this research, he will find that the same decrease of temperature and a corresponding increase of moisture, during the three growing months, has prevailed in almost every district.

Turning this knowledge to advantage for avoiding the Grape mildew, we recommend the attention of gardeners to be directed to keeping both the roots and upper portion of their Vines drier and warmer than ordinarily.

When the mildew does appear upon the Vine leaves, or Grapes, we can recommend that all the parts be gently rubbed between the thumb and fingers, kept well covered with flowers of sulphur by dipping them into a plate or bag of those flowers. The sulphur must not be washed off by syringing, or other application of water. Let it continue on until it falls off without manual aid, or until the fruit is ripe. When cut, a dewing by the aid of the very finest rose of the syringe will entirely remove the sulphur, but leave the bloom upon the Grapes.

It would be very interesting to trace out the birth-place of the Vine mildew. We have an impression that it first appeared in Germany, in the year 1845; it reached England, being first noticed at Margate, in 1847.* The year following it was ravaging France. In 1850 and 1851, it had spread over Italy and Sicily. In 1852, the Madeira Vines were destroyed by it; it reached Spain and Portugal the same year; and now we read from Oporto, that this year it has enlarged its attacks so much, that "prayers against the ravages of the disease have been offered up in many of the parish churches."

The following letter has been sent to Mr. Sidney Foster, Secretary of the Surrey Zoological Poultry Show, with permission to publish it in our columns. The writer is Mr. Snell, whose Shanghae chickens carried off the first prizes at Cheltenham and Plymouth.

"I take this opportunity of expressing my opinion of the imperative necessity for some means being adopted to verify the ages of chickens, *which are required to be accurately stated*. I have been struck, on several occasions at exhibitions, by the evident difference between

* Its fungal nature was pointed out by Mr. Tucker, gardener to J. Slater, Esq., of that town. The Rev. M. J. Berkley decided that it is a new species of *Oidium*, and named it after its discoverer, *O. Tuckeri*.

the actual age and the age declared. In one case, I pointed out to an eminent amateur a prize pen of birds evidently six or seven weeks (not to say more) older than was stated; and the remark my friend made was, 'If the owner were to swear they are not older, I *could* not believe him.' I noticed some chickens, in another pen, which I *knew* to be upwards of twelve weeks older than appeared in the catalogue. Now, I would acquit gentlemen (and I trust I should be right in so doing) of intentional mis-statements—the errors I have noticed were possibly the result of carelessness; but something is necessary to prevent such blunders, and to ensure exactness. If the ages had to be declared upon honour, or verified by declaration, greater attention would be given while preparing the statements, and any mistake then occurring might fairly be deemed intentional and premeditated. Some plan is evidently necessary to protect the interests of honest competitors who truly declare the ages of their birds; and I am content with having called the attention of your committee to so important a question.—W. H. SNELL, *Shirley Cottage, Norwood.*"

There can be no doubt that there is much truth in this charge of error in the statement of the age of chickens; and we think no one would object—certainly, no one ought to object—to sign a declaration in this form—

"I hereby declare that my *Dorking* chickens now sent for exhibition were hatched on or about the 10th day of *April*, 1853. "A—— B——."

A printed form might be furnished to each exhibitor, blanks being left for the words printed in *italics*.

Supposing that any one is base enough intentionally to allege an erroneous age as being that of his chickens, even one so dishonest would be checked in his course; for, if proof established the falsehood, his own handwriting would prevent the shuffling plea that it was a mistake being available.

This leads us to observe upon another case in which no plea of mistake should be permitted to prevail—we mean the price affixed at which birds exhibited are to be sold. Whatever sum is stated in the handwriting of the exhibitor, or of his servant, in the form of entry, should be rigidly adhered to. If an exhibitor is so careless as not to acquaint himself with the requirements of the Society whose form he fills up, he ought not to complain if he suffers from the consequences of such carelessness. To be lax in the enforcement of this rule is to open a door for inconvenient shuffling.

We know a very recent case where a pen of birds was marked in the exhibition catalogue at £10. We thought the cockerel in the pen worth all the money, and so thought the most successful breeder of the variety. He claimed the pen, but was told it was a mistake, the price was £30; and he eventually gave £20. We do not for a moment intend to insinuate that it was not a mistake, because we have no evidence either to sustain or to forbid such an insinuation; but we do say, that if an exhibitor is allowed to increase his price, under any circumstances, then is a door

opened which too many will take advantage of so soon as they find their birds are sought for; and it will be worse than foolish to append prices at all. It will be worse than foolish, because it will be evaded by the shuffling, and adhered to only by the strictly honourable.

THERE is some reason to hope that the *Potato Murrain* is much arrested in its course by the hot, dry weather at the beginning of this month. A gentleman, travelling from Penzance to Plymouth, says,—“Mile by mile, as I journeyed, was the blight less severe in the Potatoes, though even here bad enough. Hay is now (August 3) cutting in large breadths, but so long delayed that the bottom is quite blanched.” From the neighbourhood of Penzance we hear as follows,—“Potatoes are here rotting fast in the ground; hardly a tuber fit to eat; never, in fact, worse in any previous year.” From the north of Ireland, on the contrary, we hear,—“The crop of Potatoes will not be very much injured. The haulm looks very bad, but the tubers are not proportionately injured.” We think no reliance is to be placed on reports which do not show that the tubers have been examined.

SOME of our contemporaries are labouring to ridicule the increased attention now being paid to *Poultry-culture*, and they chuckle over the idea that the prices of fowls are declining. This is rejoicing at an imaginary result; for we know of prices recently given which are quite equal to those we have had to record. For instance, we know of £20 being paid for a Spanish cockerel and two pullets; and we also know that Capt. Hornby refused £50 for his Spanish cockerel exhibited, and the same sum for a pen of Dorkings, at the London Summer Exhibition. This reminds us, that at that Exhibition, Dr. Gwynne received a prize for *Black Shanghai Chickens*, but his name was accidentally omitted in the published prize list.

THE WEATHER, THE ORCHARD, AND GARDEN CROPS.

To say that the past has been one of the most extraordinary seasons on record, is, I suppose, simply to affirm what every Englishman knew beforehand.

After one of the wettest autumns we ever knew, and an open winter during part of December and January, we came to the hardest weather just at the very period when the spring is expected to advance. Then, during the third and last weeks in March, we had a thermometer, for several nights, indicating from 16 to 20 degrees of frost. This was, indeed, most unusual, and well it was for fruit-growers that the past had been of a *retarding character*, or there had been little fruit in the kingdom; thus fairly shewing the value of retarding principles in covering matters which I was the first to insist on, although I had to fight the battle single-handed at one period. Since then we have had numerous converts.

In the second week of May we had repeated snow-

storms, of such a character as to block up roads, and to call endless shovels and brooms into request. If we have had anything worth calling summer, it was from about the middle of May to the middle of June; during which time we experienced severe droughts; but even this, although prejudicial to many crops, was cheerfully endured as a thing in the main desirable, especially after the autumn and winter rains.

In order to show the bearing of the whole summer on fruits and vegetables, I must take the liberty of directing attention to the late extraordinary six weeks, or more, through which we have lately passed—such a period as I have never experienced since the memorable 1816.

I, for one, well remember the character of that sad summer; for I was engaged in the seed business in the neighbourhood of the metropolis. My father, under whom I then served, in conjunction with the nursery business, grew seeds of various kinds extensively, to supply the trade, as well as for retail; and, at that period, I remember great breadths of Lettuces, Onions, and other such things, being, day after day, thrown prostrate, until nearly all destroyed. Such was the devastation amongst our tender vegetables, that *Bath Cos Lettuce* seed was sold for five guineas the pound, trade price; and if my memory serves me correctly, *Windsor*, or the *Broad Bean*, at eight guineas the bushel. Our *Brown Cos Lettuce* seed was made up in dainty little half-crown packets, each of which might yield two or three score good seeds. So much for a comparison of seasons, with their effects; and the chief difference, as far as I remember, between that summer and the present is, that 1816 was not quite so wet, but by far colder and more windy. People, that summer, were constantly seen at haymaking and harvest work with great coats on, and that fact was matter of daily comment.

I will now state the character and condition of fruit and vegetable crops as they are and have been with us, in order to show the influence of weather on the products of the garden.

In wall fruits, *Peaches* and *Nectarines*, here (Cheshire) are far beyond an average crop; strange to say, in spite of the absence of sunshine for many weeks they were never more healthy or more abundant; but it is many years since we missed a crop of these things out-doors. *Apricots* are scarcely half a crop; the wondrously low temperature of the last week in March, before quoted, was their bane, no doubt; or else they bloomed, or rather would have bloomed, in excellent style, but that frost destroyed them in a half-developed state. *Pears*, on walls, trellises, &c., are, on the whole, a capital crop. We have them in all forms, and I am not aware that any particular mode of training bears the bell. *Marie Louise*, so much complained of by Mr. Rivers and our metropolitan friends in general, has set abundantly both on walls and on my table trellises. *Winter Neils*, too, on walls, every tree is uniformly covered; this is an invaluable Pear. *Apples* are the heaviest crop I ever knew, whether referring to dessert or to table kinds. It is unpleasant to contemplate the mischief this will cause next season, in all probability, by exhausting the trees. *Plums* are a partial crop, especially the *Green-gage*; but those of the *Magnum bonum* class are an unusually large crop; *Damsons*, perhaps a little below the average. As to *Raspberries*, I have not seen anything equal to them but once in my life; and that was more than thirty years ago. We have been gathering daily, for the most ordinary uses, fruit of the *Folstaff* kind, any one gathering of which would be considered a picked sample for any exhibition table in the kingdom; and I have a row treated on a peculiar plan, which will continue bearing for a month yet, or more. This plan I consider so useful, that I must inform our readers of it in due time. *Gooseberries*, and *Red* and *White*

Currants, are as heavy a crop as the *Raspberries*; and as for *Black Currants*, they are splendid. *Cherries* are an inferior crop; they did not set well, and have been sadly plagued by the fly. *Strawberries* bloomed and set as well as I ever knew them, but at least three fourths have been lost. It was impossible to gather them so as to be usable, and they became a prey to wireworms, slugs, &c., and rotted away piecemeal.

As to vegetables, *Peas* have run much to haulm, but the crop, nevertheless, has been far above an average, hitherto; but I do not, by any means, admire the crops of *British Queens*, which we always sow in April and May, for late autumn use. They are all cankered in the stems, or are what our old gardeners used to term "shanked." These are a precarious crop on our sandy and hard-worn soils in general, but I verily had thought, that by making trenches, as for Celery, and using much charred weeds, and rubbish, in the compost, I should have had success; but I fear them much, and have been sowing several rows of the *Prince Albert*, and *Prussian*, as a speculation. The *Thurston's Reliance* is a very useful Pea, and with us this summer has been about seven feet in height. It has a tendency to branch like the *Knight's Marrow* section. The *Imperial* is one of the most useful still, especially for those who are scant of labour and sticks; and the *Woodford Marrow*, of similar habit, for those who are very particular as to colour. They are much liked for bottling. The *Broad Bean* class are very fine this year, but they have been visited here with the fungus which has been much complained of, and which invests the whole plant, speedily, with a chocolate tint, especially the under side of the leaf. As soon as this prevails, there is an end to both "setting" and "swelling" in the pods. Those who are learned in cryptogamous matters, would do well to pay extra attention to this, which threatens, some time, to rival the potato disease.

Cauliflowers have been unusually fine. Some years have passed since I saw such large, white, and close heads. The *Asiatic* variety, which should be a week or two later, if true, has, for three years, proved neither more nor less than the old Cauliflower. So much for our modern seedsmen, who write, "superb," "choice," "extra," &c., on their packets, but to which, in many cases, might be superadded, "FUDGE."

Spring *Broccolis* were fine, too, but very late; and the latest whites run fairly up to the Cauliflower season, as they should do. The loss by severe weather, in *Broccolis*, I consider about twenty per cent.

Asparagus has been abundant, but scarcely so large as in some years, owing, doubtless, to the drought which occurred during the whole period in which it should be in its prime. It was, however, first-rate in quality, as it always is here. We do not grow what is called drumstick *Asparagus*.

Kidney Beans, raised in heat, hardened off, and transplanted, only came to hand about the 20th of July, and *Tomatoes*, which were in blossom when turned out of pots, in the middle of June, do not appear to be one week advanced since that period. This will serve to show our friends of the south what sort of a climate we have in the north. *Scarlet Runners*, sown in the last week of April, have been in blossom for three weeks, at least, but not a pod is to be seen yet, and it is now the 1st of August.

The early crops of *Potatoes*, out-doors, chiefly the *Ash-leaved Kidney*, have been very fine, and free from disease until about the 12th of July, when it gave unmistakable signs of its approach. I took up a lot (under ripe, of course) before the least taint could be discovered in the foliage, but I regret to report, that nearly one-third are since decayed, although they are placed singly on a dry, boarded-floor. At this period (August 1st) the complaints from the farmers are con-

siderable. The disease, in fact, has attained its usual universality, but certainly not with that degree of virulence which it assumed in some former years, especially, considering the extremely favourable condition of soil and atmosphere to its extension. Unmanured, fresh, and dry soils, with a constant care over the seed, seem, at present, to offer the best chances of lightening its ravages.

And, now, as to *Salads*. Never before did I find *Lettuces* so much in perfection; they have been full-sized, crisp, and tender, in the highest degree, and possessing very little tendency to run to seed. *Cucumbers* in the open ridge are all destroyed by the what is termed "the Cucumber disease." This appears to be some minute fungus, which in a few days paralyses the whole energies of the plants, and in another week or so utterly destroys them. We have had an annual visitation of this sad pest for some five years, and, as it presents some features resembling the potato disease, especially as to the rapidity and amount of the devastation, it is deserving close consideration by those highly scientific men whose peculiar province it is to prosecute such investigations. I have been informed, by most respectable persons, that districts in England, formerly noted for the production of field or garden Cucumbers, are no longer so, and that many have entirely relinquished their culture in despair. As with the potato disease at its commencement, I have tried various remedial and preventive plans, but with no effect worthy of consideration. In-door fruits I pass by as getting wide of my subject. And now for fair inferences, deduced from the foregoing features of the season.

In the first place—Fruits. Who could have expected such fortunate results, after so extraordinary a spring? I know not how to account for this, except on the retarding principle. We in the north are colder than our gardeners southwards, and there are those who better carry out retarding principles, I conceive, in the former case. It appears to me, from reports I have read, that we are more fortunate in fruits than those farther south. I have understood from Mr. Rivers that he has had, for many years, very indifferent success with the *Marie Louise* Pear, a favourite of thousands; and who knows much more about fruits than Mr. R.? But those Quince stocks, I fear, and, certainly, the precocious climate upwards, as we north-countrymen say, are not altogether favourable to superior crops. And to this may be traced the enormous crops of what are termed bush fruits, such, indeed, as seldom occurs. The partial failures in Plums and Cherries, in our quarter, may fairly be placed to early excitability, without the means of retardation.

Apples, too, a monstrous crop; and here, again, the retarding principle meets us full in the face. During the twenty-five years that I have seen Apples blossom in this district, I never but once knew them bloom so late; they had, indeed, scarcely finished blossoming in the second week of June. Here, again, a singular season accomplished what, as I believe, the art of the gardener should attempt in ordinary seasons, as far as his means reach. In bush fruits, we find enormous crops of Black Currants and Raspberries, thus evincing, as I have often suggested in *THE COTTAGE GARDENER*, their identity of habit in regard of moisture; at least, of these two useful fruits.

To conclude: a few words on vegetables. *Salads*, especially *Lettuces*, unusually crisp, fat, and tender. Here a wet summer may teach young gardeners that not manures alone may accomplish all this, but a liberal amount of moisture must be added; they may also take into consideration the assistance of a damp atmosphere, with an air temperature in an inferior ratio to that of ordinary seasons, especially in its relation to ground warmth. Cauliflowers unusually fine, too: here we

have an illustration of the beneficial effect of the conditions alluded to in the case of the *Lettuces*. Peas, good crops, but I never knew them so slow in filling. Most gardeners know, that even Peas will not fill fast unless they have a certain amount of warmth as well as moisture; hence noble-looking crops, but slow filling.

To talk about *Cabbages*, &c, were almost needless. I may just say that I have not seen a blue Cabbage this summer; and that the *Cabbage Butterfly* has been unusually scarce. I have not seen half-a-dozen since Midsummer. *Wasps* must have had a long nap, for I have not seen one for six weeks. R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY, REGENT STREET, JULY 26TH.

DISA GRANDIFLORA.—All round the room, tables were loaded with the finest fruits, vegetables, and salad plants that possibly could be, and we had flowers which were not surpassed in health, beauty, or rarity, at any of the shows for the last twenty years—to wit, those of a very fine *Disa grandiflora*, sent by C. Leach, Esq., of Clapham Park. I have known of Mr. Leach's doings for many years, and I have been under obligations to him long before I ever saw him, and now I may as well say, that he has crowned his complete success in a different line, where ninety-nine out of every hundred gardeners that made the attempt failed; namely, he can grow, flower, and cross all the most difficult bulbs in Africa, with the greatest ease, and very likely he does not think that any greenhouse or half-hardy bulb is nearly so difficult to grow as the potato.

The *Disa grandiflora*, in all probability, is an evergreen! like *Valotta purpurea*, which inhabits the same kind of locality, only not so high up; and here is where we have been all wrong with it. This plant of it has been green, and never died down these three years past; it is as healthy as a plant could be, and throwing up strong healthy shoots from, what you would suppose, underground stolons. There were two flower stems, twenty inches high, and each of them had several flowers in bud, and one open on each, so that this charming hardy orchid flowers more like a *Tigridia* than any thing else. It was in a large 32-pot, and in very, very sandy peat, and had nothing done to it out of the ordinary run of greenhouse culture these three years. Dr. Burrell said that *Valotta purpurea* was the only bulb of the order of Amaryllids that he found growing in boggy peat in Africa; and we know that *Valotta* was lost, over and over again, while it was treated like the rest of the family, and not as an evergreen, but now a cottager can grow it in a window as easily as a *Crocus*, and more so. It will be exactly the same, some day or other, with *Disa grandiflora*.

Who could have thought, the other day, when I promised to tell how it could be kept, at least for a time, that I should have been so fortunate as to learn the cause of our failure with it for years, and how simple the apparently most difficult culture seems when we know how to pursue it! I am indebted to Mr. Leach for this information.

It is well known to some of our readers that I am not at liberty to give the name of the gentleman who studied the plant for me on Table Mountain, but that is of no moment, as we have a very lucid statement of the situation and circumstances from the pen of Sir John Herschel, on his return from the Cape. Sir John placed a registering thermometer on the summit of Table Mountain, and left it there for three years, and the lowest temperature was $31\frac{1}{2}^{\circ}$, and the highest $96\frac{1}{2}^{\circ}$ during that time. I well recollect the sensation caused in this room, in Regent-street, at the end of 1838, by

some very rare Cape plants, exhibited from Sir John Herschel, who flowered them in his open garden, in London; they were—*Satyriums*, *Cyanellas*, and a rare *Vicusseuvia*, and it was in answer to an inquiry by the Society, as to the circumstances under which these and such plants are naturally found, that we first heard about those of *Disa*. "Its habitat," replies Sir John, "is on the margin of pools of standing water, on or near the summit of Table Mountain, the drainage of the boggy slopes of the mountain, where its roots are immersed. These are dry, or nearly so, in summer. In such localities, it is, of course, frequently involved in the dense mist of the clouds, which even in the hottest months often cover the whole summit of the mountain for a week or a fortnight uninterruptedly. I presume, a moderately warm, habitually damp, atmosphere, would suit it." This, ten years after this suggestion, twelve months of "moderately warm, and habitually damp, atmosphere," may have helped the flowering of *Disa grandiflora*. When I say that *Ixias* may be growing on the dry banks of these boggy "pools," and only a few yards from the *Disa*, whose roots are immersed in water all the year round, it will give some idea of the difficulty of knowing how to deal even with two plants from the same locality, without a precise knowledge of their natural habitats. The sailors give the name of "tablecloth," to those white, misty clouds, which envelope the mountain top so often, and for so many weeks at a time. The high winds which sweep over the mountain, are, for nine months in the year, loaded with vapours from the South Pacific, and although they may affect the vegetation on the summit, generally, such plants as grow low down in hollows, like this *Disa*, may not require, under cultivation, such currents of ventilation, as we know to be highly essential to Cape Bulbs in general. These data, therefore, would imply the following, as a rational mode of cultivating the *Disa*:—

The tuberous roots to be planted rather deep in pots of sandy peat, very well drained, so as to allow of large supplies of water during the summer, without fear of any stagnation at the roots; from April to October, a damp atmosphere and free ventilation would be secured easiest by plunging the pots in moss, in a cold pit, which should be open, or ventilated at back and front, and the moss kept constantly moist. A greenhouse would be quite damp enough for it in winter, December, January, February, and March, being the hot, dry months at the Cape; and there can be no doubt now but the plant must be kept growing all the year round, else what is to become of those healthy young shoots which are now pushing up all round the flowering parts of Mr. Leach's beautiful plant. I shall not lose sight of this plant; and as Mr. Leach is seldom absent from our meetings in Regent-street, I shall have no difficulty in learning all about it. Meantime, if the trade cannot supply a sufficient number of plants of it for others to experiment upon, let us send out a vessel to Simon's Bay, with a dozen or two of Wardian cases, and let the butler or head-steward of the vessel go up to "remove the cloth," without any harm to the mountaineers, or to the new constitution sent out at last, and we shall soon have *Disas* enough, *Herschelias*, too, as well as all the *Satyriums*, of which *candidum*, *carneum*, *cucullatum*, and *chrysostachyum*, will need very sandy peat, and *papillosum* good, rich loam, the same as for *Valotta*. The *Satyriums* all require large doses of water in summer, and complete rest after flowering, and as much sun-heat, while at rest, as can be obtained.

I am afraid to mention one-half of the *Kitchen Vegetables* exhibited on this occasion, for fear of setting the young gardeners and the cooks at loggerheads; for I have had some hard scratches that way myself in my day. I may state, in round numbers, however, that Mr. Burns, gardener to Lord Stanhope, at Chevening,

had the best of it: Mr. Smith, gardener to Mrs. Keay, of Little Blake Hall, Wanstead, second best; and Mr. Spivey, gardener to J. A. Honblon, Esq., of Hallingbury, near Bishop's Stortford, third best;—that Mr. Burns had 70 kinds of things from the kitchen garden that day, or in the whole competition, I forget which; that Mr. Smith had 63 kinds, and Mr. Spivey 51 kinds. Mr. Burns won all the best prizes of the last winter season offered by the Society, and Mr. Smith the second best—besides, Dr. Lindley gave £5 to be fought for as well. These two giants, however, swept off every farthing of them; but, unless we are all at war among the Cossacks next winter, Mr. Burns and other garden poets must look to their laurels, for I hear there is to be a tremendous rush for these prizes next winter. In a collection of *Peas* from Mr. Wrench, of London Bridge, was the tall *Sugar Pea*, about which Mr. Charles Dickens tickled the readers of "Household Words" a year or two since. That is the pea they eat in Germany, and all over the continent, as we do Kidney beans; we saw pods of it snapping like glass, to illustrate the lecture, showing it had none of the glove-leather-lining like other peas. In a large collection from the Society's garden, was a *Cabbage* called *Sutton's Cornish*, which we were told was one of the best and most useful, as the ribs of the leaves were as tender as marrow. In this garden they still prefer Knight's different *Marrow Peas* as the most sugary; and I agree with them; but I think their *Raspberry* ground is quite worn out, for they showed a dish of Rivers' *Large-fruited Raspberry*, which were certainly the smallest I have seen these ten years; it would just take four of them to make one of the *Pastolf* exhibited by Mr. Youell, of Yarmouth. I tasted six kinds of the little old-fashioned *Gooseberries* from our garden, and I wondered that people so run after the great pudding-bags of berries from the Great North Westerns. Of these six, the *Oval Red* and the old *Rough Red* were the two best. *Wilmot's* white and red *Currants* were particularly good. They always show new things from Paris, and other parts of France, from this garden; but they still keep up the useless pedantry of sending the French names with them, as if there was nobody about London who could translate the French labels. When shall the "Mysteries of Paris" be done away with in our English gardening?

NEW SALPIGLOSSIS AND LOBELIA.—There were six plants of the new scarlet *Salpiglossis* from Mr. Henderson, of the Pine-Apple Place Nursery; and six of a new white variety of *Lobelia ramosa*. The *Salpiglossis* is orange-scarlet, and would make a most beautiful bed. The white *Lobelia* will be very useful, but not so gay as the blue *racemosa*.

FRUIT.—There was a cut branch of a *Red-berried Elder*, loaded with clusters of red currant-looking fruit; very pretty indeed. The sort is named *Sambucus racemosa*. There was a *Black Prince Pine*, from Mr. Fleming; a kind I never recollect seeing before; it was a beautiful-looking fruit, with a purplish-red cast, and the crown rather that way; the weight was above 5 lbs. There was a *Queen Pine*, from the Bishop of Salisbury, about the same weight. There were several other good samples of this fruit, and all the other fruits in season; but the only fruit more pointedly alluded to in the lecture was a dish of *Figs*, from Mr. Fleming, out of a new kind of fig-house erected last April twelve-months, and which is now imitated in first-rate situations for fruit, as at the Duke of Bedford's, Mr. Peto's, &c. This new house is only six feet wide, and as much like the new glass walls as we could make out.

There was a beautiful Forget-me-not (*Myosotis azorica*) from the Society; and I was told, coming home, that it is no more than a biennial, and ought to be constantly kept from cuttings. There were lots of other plants

from the Society, and the new annuals mentioned last week, to which add a *Schizanthus violaceus*, a dark violet flower, a very unusual tint in soft things, and a white *Nolana grandiflora*, at which all the fancy flower gardeners will jump—low white beds being scarce. Mr. Keynes, from Salisbury, had a box of *Picotees*, and another of *Carnations*, which looked very large and well marked; but I am no scholar in that way at all. Mr. Ayres had two *Geraniums*, crosses by the fancies and wild Africans; they were not named. One is in the way, and a good improvement on *Curate*, the bedder, and *Curate* must now go the wall. This is a cross from *Fulgidum*, by the pollen of a dark fancy *Geranium*, and it tells, as plainly as A B C, where the florists first went wrong with *Fulgidum*, the only scarlet within their reach. The scarlet is so muddled at the first cross with the overwhelming black of the larger flower as to be as good as lost at the first start. To make the best of *Fulgidum* now, all we can do is to get its scarlet on a white ground, then we shall keep the scarlet in its purity; but the moment you touch it with any of the race that is not descended from a pure white, or is so worked as to become pure white itself, it is tarnished directly. This variety is quite sterile, although only a first cross from a wildling. The next one is a beautiful, large, glistening white flower, with a little black in the back petals. It is a cross from a wild white one called *Formosissimum*, by the pollen of a light fancy one, and here the cross is fertile in seed and pollen; as much as setting at defiance all the philosophy that has been spent in accounting for such and such differences in cross seedlings.

There was a cut flower of a *new bulb* from Mr. Pince, of Exeter, and we were told that it was a *Hæmanthus*, allied to *H. coarctatus* and *hyalocarpus*; I think, however, it was not quite new to every one in the room, and the affinity given is questionable; but this is the most difficult genus in Africa to make out in the absence of the whole plant. I have only coloured figures (*of the flowers*) of the two species mentioned, and, therefore, cannot say positively from this cut flower that the plants are near each other in this genus, but I think they are not, and I do not think they belong to the same section of the genus as this new one. Then, to see who is right, I shall attempt to describe the whole plant, of which Mr. Pince sent only one scape and one flower-head. First of all, the roots are numerous, and as much like *Asparagus* roots as possible; the old bulb is broad at bottom and very flat, and the top of it is very uneven from the marks of the old leaves. The flowers come before the leaves; the top of the scape is dull red, without marking, as in *hyalocarpus*; the bottom of it, which we did not see, ought to be very light green; the leaves are not recumbent, as in the section of *coarctatus*; they must vaginate, or sheath into a column, considerably above the bulb, if I am right, and then spread out into large and wrinkled upright blades between the column and the expansion of the several leaves to their tip; the plant would stand from a foot to eighteen inches high out of the pot or border, according to the strength of the bulb. Also, if I am right, it is a hardy border plant that will stand the winter, at Exeter, with a little coal-ashes over it. The plant, whose flower we saw, will not have ripened its leaves in the open border before next February, or, if the winter is very hard, it will be very loth to "yield to circumstances" then. After it is one month perfectly dry in a pot, if you water the pot and put it into the stove to force, the flower-bud shows in ten days, and this at any season of the year. Now it would be worth while to buy this *new bulb* in order to check it with my account of it. I am almost sure there is not a man in London who knows much about it, if it comes up to my description; but I had two dozens of it from the Zulu country many years ago, and it is the easiest bulb in all Africa to grow. D. BEATON.

CASSIA CORYMBOSA CULTURE.

SINCE writing a passing notice of the above beautiful plant, that has been an inmate of our gardens for more than half-a-century, several inquiries have reached me as to the peculiar treatment it requires to suit it for different circumstances; and one of our greatest gardeners, from a large establishment, expressed his surprise that a plant from Buenos Ayres should thrive so well out-of-doors in summer; as, under his care, it had been treated as a favourite denizen of the plant-stove, and even there, at all times, and especially in winter, was worthy all the labour bestowed upon it. Leaving, then, the notice of the fine standard at Courteen Hall to shift for itself, merely premising, that without grafting on any allied strong-growing stock, there will be no difficulty in growing a good standard in two years, or three, at most, if there is any chance of giving a little more heat in the spring than a common greenhouse can supply.

I will first notice the general treatment the plant requires; and then glance at the peculiar culture necessary for certain circumstances; adducing, not only our own limited experience, but what has been picked up by observing the experience of others, and noting the peculiarities of the plant.

1. *Propagation*.—This may be effected any time during the summer, as, by closely examining the plant, some short pieces, about three inches in length, and rather stubby than otherwise, will generally be found, though the mass of the shoots be from eighteen inches to twenty-four inches in length. But the best time for obtaining such shoots is in the spring, when the plant begins to grow freely after being pruned, and when, generally, there are more shoots than it would be desirable to retain. These, as soon as a little firm, should be cut off close to the stem, with a heel; have any small scaly parts removed, and one or two of the larger leaflets shortened, and then be inserted round the side of a small pot, in sandy peat and loam, with a quarter-of-an-inch of white sand on the surface. The nearer the base of the cutting comes to the drainage, and the closer it is to the side of the pot, if the cutting is at all firm in its consistence, the sooner will roots be formed. Place the cutting pot into another pot two sizes larger, fill the space between with moss, or sand, and then set a conical glass over the larger pot, so that the drip will fall into the space between them, and not where the cuttings are, and then plunge in a stout hotbed, with a bottom-heat of from 75°, and a top-heat averaging 60°. Attention to watering, giving a little air at night, and shading from bright sun during the day, are all that will be required until the cuttings are struck, when they should be freed from the bell-glass entirely for several days; be potted separately in four or five-inch pots; kept close and warm until growth is freely progressing; be hardened off, by more air, by degrees, and inured to the treatment they are to receive during the summer as in-doors or out-doors plants.

Soil.—A mixture of two parts good fibry loam, one of peat, and a little charcoal, with good drainage, and a little manure watering, will grow them well.

Watering.—This will be wanted liberally in summer, but very little will be needed in winter, more especially if kept in almost a dormant state. Of course, if kept growing then, as much water must be given as will keep them healthy.

Temperature.—When in almost a dormant state, the plants will not be injured in a medium temperature of from 43° to 45°; but, as noted above, the vital powers then must be next to dormant. To bloom, the temperature must not be lower than from 50° to 60°, with a rise from sunshine. In summer it may safely range from 70° to 80°.

Pruning.—This is a matter of considerable moment, as the flowers are produced in little bunches on the end of a long flower-stalk that comes from the axil of the leaf-stalk, that supports the pinnated leaflets on young shoots of the current seasons growth. The better that the shoots of this season are matured, the better will the young shoots that come from their buds the following season bloom. The plants, therefore, when established, and when wanted for a particular season, will stand hard pruning; that is, being cut back, so as only to leave two or three buds at the base of the shoots. I have had nice flowering plants in summer and autumn in the greenhouse, from cuttings struck in the mode mentioned above in the spring, but, of course, these received no pruning that season. I have had plants in a stove-house flowering nearly all the year round, because, as the shoots grow, the flower-buds will be produced; and this is more especially the case when a strong, lanky shoot is now and then cut clean out, to make way for, and give strength to, the smaller shoots I have mentioned as generally clustering near the base, and so suitable for cuttings when young stubby shoots in the spring are not to be had. But to have nice balanced plants flowering equally all over, it will be necessary to prune and grow for the purpose aimed at. For instance, here is a large plant that I wish to go out-of-doors, or to ornament a greenhouse in summer and autumn—that I would prune back in the end of March, keep it in the warmest end of the greenhouse, if I had nothing else; but in a slight hotbed, or moderate hothouse, if I had them, until it was growing, shifting it into fresh soil when the young shoots were several inches in length, hardening the plant off by exposing to more and more air by degrees; and then taking the plant to the greenhouse in May, or planting it out-of-doors in June. But here is another plant I wish to yield its golden blossoms in winter and early spring in a plant stove. By April, I would give it all the air and sun there that I could. I would give it a more exposed place in a cold pit or greenhouse, and lessen the quantity of watering. In June, place it out-of-doors, under similar treatment, and towards the end of that month, or beginning of July, the wood having lost all its sponginess, I would prune it back; allow it to remain for two or three weeks in a shady place; and then place it in a close pit and frame, where growth could be encouraged by atmospheric moisture and a little shade. As soon as growth was freely progressing, I would either shift or liberally top-dress the plant; keep close, as before; give more air by degrees, until, by September, it had the full play of the sun during the day, and the glasses closed at night, and then, by October, the plant would be moved to the coolest part of a stove, or the warmest end of a greenhouse. The same rule as to pruning will apply whether the plant be grown as a standard, a squat, dense bush, or a conical, one-stemmed plant, such as is a favourite mode with Fuchsias. In the latter case, to have the plant all alike, the shoots must be pretty freely spurred-in, and care taken, as in the case of an old Fuchsia, that the spurs break freely, by adopting modes such as those suggested last week.

2. *Particular treatment to suit different purposes.*—I have noted the most of these under the above particulars. It will be seen, that to have a plant continuously in bloom, or to have the same plant much finer, for a certain period only, a different course must be pursued. It will also be seen, that for flowering in a plant-stove in winter, the ripening and resting must take place in spring and summer, and then is the time that water should be given, in quantity so as merely to keep the plant from flagging. In growing for the greenhouse in summer, whatever position the plant may have when in bloom, it will be advisable to give it a very open, airy

position by September; and if the plant was placed out-of-doors, against a south-aspected fence, until the middle of October, the wood would be all the firmer. Comparative dryness, at this time, will assist the hardening of the wood. In housing either upon, or beneath, the stage of a house of the specified temperature, the softer parts of the shoots may be removed, but the final pruning and thinning should be left until the buds are swelling in spring. In winter, the roots should neither be wet nor dry. A sprinkle over the stems in a sunny day, with tepid water, will do them more good.

For Beds out-of-doors.—This I have not tried, and would only recommend it to those in warm, sheltered places, merely on the strength of the fact of seeing plants in pots blooming freely out-of-doors when used in a very rough manner. I throw out this caution, because, in an exposed place, I have had but little success with plants from a similar latitude, that do very well with several of my friends considerably north of London. In these matters, *position* often goes farther than latitude. But, as many may like to try, I would offer the following suggestions:—Let the plants be at least rising two years old from the cutting. Try a few plants for a season before you trust a bed. Re-read what was said of *Erythrina cristagalli*, treated in similar circumstances. Choose an open, and yet a sheltered, position for the bed; let it be deep dug, and drained, and consist of sandy loam, with a little peat added round the ball of the plant. Keep the plants as backward in the spring as possible; let them be pruned, started, and potted, before the middle of May—that is, if potting be necessary. See they have no check when planted out in June; a slight protection may then be necessary for a short time. Thin out the shoots if too numerous, as they should stand upright separately, and have air and light playing round them. A few leaves may be removed, if found too dense, taking those away that have no flowers in their axils, or from which the flower-stalks have dropped. This thinning will be more requisite for ripening the bottom of the shoots by the middle of September. In October, cover the base of the shoots with moss, to prevent injury from a sudden frost. Take the plants up, and pot them when they get shabby. Place them in a cool, shady place, that the remaining vital energies in the stems may go to cause fresh roots to be produced. Part of these stems may be cut away, as they fade in winter, until they are stumped-in like a willow stool in spring. During the winter, the roots should be moistish, but rather dry than otherwise—and thus treated, the stools will become stronger and stronger every year. It will be seen, that preserving the vital powers in a rather torpid state during winter, and yet safe, will constitute no little part of the success.

Insects.—The Green Fly sometimes appears, when tobacco smoke must be used. The Red Spider is a worse enemy. The chief preventive is a liberal use of the syringe over the foliage, for which syringing the plant is always grateful.

Peculiar Characteristics.—Like others of the allied groups, the plant furnishes a pretty example of the vital phenomena of the sleep of plants. In the evening, the opposite leaflets not only collapse, and meet each other, but the surface of the leaflets is changed, the under sides becoming the uppermost. Before many of our readers have left their couch in the morning the leaves have regained their usual position. R. FISH.

JOTTINGS BY THE WAY.

(Continued from page 365.)

OULTON PARK, near Leeds, in Yorkshire (the seat of John Calverley, Esq.).—The mansion, at this place, was

unfortunately consumed by fire some two or three years ago. In rebuilding it, it was thought advisable to remove the kitchen-gardens, vineries, &c.; and this, so far as the gardens are concerned, is an advantageous change. The site chosen is considerably elevated, with a good, deep, open soil. There are three vineries of considerable extent. This summer the Vines were planted, the border having been properly prepared, and well-drained. The Vines had been started in pots, and had made shoots. They were carefully planted; the balls at as far a distance from the front wall as the old shoots would allow. These were buried three or four inches deep in the border, for the purpose of emitting roots from the joints. All this care was taken, and a good watering given, yet the Vines have not grown satisfactorily, and I cannot satisfy myself why they have not done so. In order to prevent the heavy plashing rains from falling upon the border, a four-inch wall has been built next the border, and three inches from the front wall of the houses, leaving a cavity that width, all the length. The stems of the Vines necessarily have to cross this cavity before entering the houses, and that portion of the stem is exposed to a constant cold current of air. This may be the cause why the Vines have not grown as well as they ought. I advised the filling-up this cavity with pebbly gravel, and the stems to be covered with it also. I trust they will now improve in growth. I mention this peculiar case of failure in Vine-culture, for the purpose of asking any practical readers of *THE COTTAGE GARDENER* if such a case ever came under their notice, and I should be much obliged if my friend, Mr. Errington, would give his opinion as to the cause why these Vines have not grown properly. The new mansion is a fine building of Yorkshire stone, and is nearly finished. The intended pleasure-grounds around it are as yet covered with the debris from the building materials; but there is a fine space for a flower-garden, rosary, American garden, and a conservatory, which I shall hope to see all laid out judiciously by the time I may visit this finely-situated place next year.

WOODLESFORD HOUSE, the residence of Mrs. Bentley. This pretty villa is just one mile from the preceding—I visited it the same day. There is a Vine-wall here sixty-nine feet long, and eleven feet high. It is covered the whole length with one Vine. The gardener informed me there are 350 bunches of grapes upon it, and in order to ripen them and the wood for the succeeding years, a glass front has been erected, something similar to those I mentioned at Trentham. I was told they ripened well, and averaged nearly a pound weight each bunch. No artificial heat is used—the heat of the sun only being found sufficient to ripen the fruit. The tree was perfectly healthy, foliage large, and of a good colour. Of course, the grapes do not ripen till late, but then they hang on the tree for a long season, and supply the family with grapes all through the winter. Now that glass is cheap, I expect we shall shortly see most of our fruit-walls covered with it to protect the early blossoms, and ripen the wood in the autumn.

Mrs. Bentley is a judicious lover of flowers, and has a good collection of Carnations, Picotees, Pansies, and Pinks. The ground before one front of the house is laid out in beds cut out on the turf. Here were masses of scarlet Geraniums, Verbenas, Petunias, Calceolarias, &c. One large bed was planted with the old common China, or as it is commonly called, the Monthly Rose; and it was completely covered with flowers of a much higher colour than usual. I am quite certain this is a desirable and useful plant for the bedding-out system. I was delighted with it, and almost longed that my friend Beaton had been with me to join in my admiration. I never saw so effective a bed of flowers. In another part of the grounds, I met with a considerable

hollow, the sides of which have been formed into a rockery, and with good effect. It is a cool, glen-like retreat, and there are the usual Alpine plants occupying the interstices between the fissures of the rocks. Several Saxifrages and Sedums were in good bloom.

In the kitchen garden a new kind of Celery was pointed out to me, and the name given was Jackson's *Solid Red*. It was the finest Celery I have seen on my journey.

MIDDLETON HALL, the seat of T. Embleton, Esq.—This place is about five miles south of Leeds. Here I was gratified to find a tolerable collection of Orchids thriving well, but sadly crowded. There is, however, a new house erecting to give more space for them. I noted a nice plant of *Aerides crispum*. This species, as is well known, does not branch out freely, and, to cause it to do so, the gardener here bent the plant down, and has succeeded in inducing it to throw up a young shoot from the bottom, which has attained now some four or five leaves. A hint to the wise is enough; this is a notch to be added to the culture of *Aerides*.

Against the back wall of a stove house there is a large specimen of the *Night-blowing Cereus*, or Cactus. It had grown several years, and did not flower. To induce it either to grow better or flower, a wire trellis was affixed to the wall, and behind it was stuffed a layer of moss: during the summer this was frequently syringed. The consequence of this treatment was, the *Cereus* threw out roots among the moss, which caused it to grow strong. In the winter following the water was withheld, to give it a degree of rest, which had the effect of causing these strong shoots to show flower the summer following; and it has flowered freely every year since this plan was adopted. On one part of the plant, a branch of the pretty *Cereus flaggeliforme* has been grafted, and trained to the moss likewise. It has grown rapidly and strongly, and flowers most abundantly. This plan is a good one for both species, and might be practised with many other species of the tribe. Grown in pots, in the shade, here is a fine collection of Lycopods in the highest health and luxuriance. I noted, especially, a fine specimen of that beautiful species, the *Lycopodium lapidophyllum*. It was the finest plant I ever saw, measuring full five inches in diameter—a large size for the tiniest of all Lycopodiums.

T. APPLEBY.

(To be continued.)

ROSE CULTURE.

(Continued from page 366.)

PRUNING.—Having given our readers, to the best of our knowledge, the characteristics by which the various classes of Roses may be distinguished, I shall, in this paper, give instruction how to prune them. This operation is an important one, inasmuch, that if the pruning is improperly performed, or at the wrong season, the plant will not produce flowers so abundantly, and, in some instances, not at all. In order that the pruning of the Rose in every class may be perfectly understood, I shall run through the classes as I have already given them, and for this reason, that some of the classes required different modes of pruning, and a different season, in some cases, for the operation.

CLASS I.—*Rosa Gallica*.—The whole of this class should be pruned in early spring. If any of them produce a strong shoot during the summer, that is evidently robbing the rest of their due share of strength, it should be cut out entirely, even during that season, in order to divide equally, amongst the rest of the branches, the support the roots have drawn from the soil for that purpose. Towards the end of February, or

beginning of March, when there is no frost, proceed to give them the annual regular pruning. Examine the heads of each, and, in proportion to the strength of the shoots, cut them in. The best instrument for this work is a strong, sharp knife. Some use pruning scissors, but even the best of these, instead of a clean cut, only bruise or crush the shoots, and thus injure the bud next to the cut, besides leaving an ugly snag, that scarcely ever becomes healed over. Place the knife just under and beyond a bud, and draw it through the shoot upwards in a slanting direction. Cut so that wet cannot get into the severed vessels or cells of the wood. As the greater part of this class are moderate growers, they should be pruned moderately close; strong shoots, to within four or five buds of the last year's shoots; very weak shoots should be cut away entirely, and the head left so open as to allow room for the summer shoots to have room enough to grow and expand their bloom.

CLASS 2.—*Rosa centifolia*.—Provence Rose; and

CLASS 3.—*Rosa centifolia*, variety *muscosa*, the Moss Rose.—The pruning of these two classes is the same. To produce fine flowers, they must, with some exceptions, be pruned-in close, that is, the preceding shoots should be cut to within two or three buds of their starting point. The season for pruning these is, the same as the last, in spring. Cut away the very small spray, and if the rest are very much crowded, thin them out also, leaving the head open. The vigorous growers, such, for instance, as Moss *Du Luxembourg* and Moss *Princess Adelaide*, should be pruned very little; that is, some of the branches should be cut clean ont, and the remaining ones just the weak ends cut off; then tie the shoots downwards; the buds will break all the length, and produce abundance of bloom.

CLASS 4.—*Rosa alba*.—The season for pruning this class is the spring. There are some very vigorous growers amongst them. All of this habit should be pruned moderately; that is, not cut in close to the old wood, but left six, or eight, or even twelve inches long. The weak growers should be cut in close, only leaving one or two buds.

CLASS 5.—*Rosa damascena*, the Damask Rose.—Many of this class produce shoots very numerous, and, consequently, the lower part of the shoots is very imperfectly ripened. To remedy this, the branches should be thinned-out about Midsummer, cutting away all that are weak, or not flowering, and all that are so strong as to overpower the rest. This mode will enable the plants to produce moderate-sized shoots, well-ripened throughout. The regular spring-pruning should be done about March, and the shoots cut in to within four or five buds.

CLASS 6.—*Hybrid Provence*.—This class is of such moderate growth that no summer pruning is requisite. In the spring they should be pruned-in closely.

CLASS 7.—*Hybrids of Chinese, Bourbon, and Noisette* Roses.—This is a large class of Roses of various habits, some growing very vigorously, and others moderately so. The vigorous grower should be well thinned-out, and the shoots left for flowering be cut in very little: such shoots should be tied downwards, to cause them to break freely, and then every shoot will be covered with flowers. Many of these may be used as pillar Roses, or to plant against walls. The moderate growers may be pruned-in more closely. I should recommend the pruning of this class to be done rather later than the preceding classes, because they are more tender, and late spring frosts will injure the early shoots.

CLASS 8.—*Rosa spinosissima* (The Scotch Rose).—The only pruning these require is to thin out the shoots, and shorten in any that may overgrow the rest.

CLASSES 9, 10, 11.—The *Austrian, Sulphurea*, and *Sweet Briar* Roses.—These all require care in pruning, especially that great favourite, the best of yellow Roses, the *Persian*. If this is shortened-in much, a fine head

will be formed, at the expense of loss of flowers. Let the branches be thinned-out, and the shoots that are left suffered to remain long. Generally each bud on these long shoots will produce flowers, whereas, if they were shortened-in much, there would be no bloom.

CLASS 12.—*Climbing Roses*.—All the Climbing Roses, except the *Banksian*, should be pruned in March. Then cut away all old, weak shoots, and tie or nail the young, strong ones to the pillars or walls against which they grow, shortening them very little. The side-shoots from these strong branches are what produce the large bunches of flowers, for which this class is so remarkable. The *Banksian* Climbing Rose.—Where this Rose grows freely, the only pruning it requires is to cut out the late strong shoots about the end of July. The flowers are produced on the short shoots made the previous year—hence these must be carefully preserved, or there will be no flowers.

CLASSES 13 and 14.—*The Macartney Rose*.—The branches of these Roses are produced pretty equal in strength—hence very little pruning is necessary. Should they be too thickly placed on the tree, so as to prevent them being trained without crowding, then they should be thinned enough so as to have sufficient to cover the wall, and allow space for each leaf to have its due share of light.

T. APPLEBY.

(To be continued.)

REMARKS ON THE SEASON.

(Continued from page 367.)

HAVING, in my last, promised to report of such crops, the success or failure justly attributed to the season, and beginning with that most important class the *Fruits*, it is proper to observe, that of the small fruits *Black Currants* have been least plentiful. A partial blight took them in May, whereby each bunch or cluster was reduced to half its usual proportion. This unusual visitation of a fruit which is considered the most hardy one we have, created no little surprise and loss in a neighbourhood where considerable quantities are grown for market; but the evil did not extend any farther than to the loss of the fruit, the plants remaining healthy, and the proportion gathered at last exceeded what was once expected. The *Red* and *White Currants*, as well as *Raspberries* and *Gooseberries*, have been most abundant, and in no way affected by the cause, whatever it may have been, which diminished the *Black Currant* crop. *Raspberries* have been everywhere very fine and plentiful; not the same, however, with *Strawberries*, which, at first, promised to be very abundant; but after the first gatherings were over, the successional fruit did not swell out to anything like the extent that was expected, while, in many cases, it was all but a complete failure. This seemed the more inexplicable, because the natural agent, rain, which is expected to command a crop, was certainly not wanting in the present season; perhaps its too great abundance might be assigned as the cause of failure; certain it is, that the after-crop of *Strawberries* was anything but plentiful; while the absence of sunshine told on the flavour of all. I may likewise here observe, that the *British Queen*, which had never been in a healthy condition with me, died off entirely, or nearly so, the last winter; and one or two other kinds of a somewhat kindred habit suffered a similar fate—the most useful ones being *Keen's* and *Hooper's Seedling, Bank of England, Princess Alice Maude*, and one or two others, all partaking more or less of the characters of the first-named. Even the *Elton* was not so useful as it was wont to be, and the other kinds were all similarly disposed to cease bearing after the first fruit was gathered. This state of things

rendered the Strawberry crop less productive, on the whole, than it promised to be, yet it was certainly equal to last year, and on soils more suited to its growth than that on which it is planted on here the result has been tolerably good.

Of hardy orchard fruits there is much diversity; *Pears* are certainly not so plentiful as last year, neither on the open standard nor on the walls. Neither are *Plums* so abundant, yet these fruits cannot be called general failures. *Cherries* have been indifferent; the dull, ungenial weather, no doubt, acting on them, so as to cause many to drop or become abortive, that in a fine season might have been good. *Apples* are also variable; some trees, or rather, certain kinds, seemingly tolerably good, while others are a complete failure; but few fruits are so closely noticed as the Apple is in a country where it forms one of the staple products of the district; it is in such localities that we are told, with something more than prophetic assurance, that such and such a kind bears each alternate year, barring very severe weather at blossoming time, &c.; while other kinds do not bear so often as that; and others are either capriciously disposed, or are more influenced by the season, so that their bearing cannot be depended on at all, unless aided by the favourable circumstances above-mentioned. In the present instance, there certainly was less absolute frost in the month of May than is usually the case, and yet there was but a very small fraction of the blossom became fruit, owing partly, no doubt, to the absence of sunshine; all these things acting together have lessened the crop so much, that the produce will be under that of the average of seasons. *Filberts*, an important crop here, are certainly as good as last year, and perhaps less diseased; and *Walnuts* are very plentiful.

Tender *Wall-fruits* are not all abundant; on the contrary, *Peaches*, *Apricots*, and *Nectarines*, are thin, while *Figs* are good and plentiful. From some cause or other, and, no doubt, wisely ordained, the Fig-crop has, for several years, been most abundant when the others were scarce. The failure this season has not, however, been accompanied by any disease in the trees, which, on other occasions, has appeared sufficient to account for it; but it would seem to have been something defective in the embryo buds, for the blooming season, though not without some severity, was certainly not remarkably so, and we have often enough had a good crop of fruit set in weather certainly more unpropitious; but the other agents of success were, doubtless, present then. In making these observations on the Peach, &c., it must not be inferred that no protection is used; on the contrary, it is used, and, no doubt, serves an important purpose on cold nights; still, its presence will not secure a crop, when, by some natural infirmity, the organs of fructification are unable to perform their part. A failure, under such circumstances, is sure to follow.

Turning from fruits to *Flowers*, and omitting all those of a potted kind, we find a considerable difference in the habit and character of the various flowering plants which ornament the parterre and mixed border. Amongst the former a rank growth has been perceived in some, at variance with their flowering; while with others, this has been reversed, and not a few failures; and, with us, one which seems most surprising is *Petunia*, which has certainly not done so well as might have been expected of it; neither has *Gallardia*, *Cuphea platycentra*, *Lobelia*, nor some of the *Salvias*; while the *Scarlet Geraniums* made such progress as to fill their beds before the usual time, and if dry weather should set in we have no doubt but they would flower pretty well. The most successful of all the bedding plants, and the one which, above all others, we most admire for its many useful properties, is *Mangles' Variegated Geranium*.

This worthy plant seems fitted either to stand the withering influence of unclouded sunshine, or the chilly coldness of continued rain, or dull weather. That we have had the latter to deal with is so much more the pity, but it has not marred the beauty of this interesting object; and not one amongst the beds I have of it, or the edgings which it forms around others, but has fully answered the purpose intended for it. This, certainly, has not been the case with the *Ivy-leaved* kinds, while the mixed kinds of *Geranium*, better known as the greenhouse flowering ones, have been anything but good, but a mass of coarse leaves, in most instances without any flower; while in others, as the fancy kinds, the growth has been more limited still—on that account not the less successful because uneven, and the general appearance of the whole not pleasing. *Calceolarias* have been better; the frequent rains have favoured their growth, although, now and then, we have seen one die; but we have not noticed anything analogous to the disease which Mr. Fish says has preyed on his *Kentish Hero*. Certainly, this kind never has been so great a favourite with me as its former merits seem to have made it with Mr. Fish, and others, for it has always refused to make any progress during the middle summer months; so that it is only the first large trusses of bloom, and the growth which takes place after the middle of August, which it has to recommend it; and the present season, though presenting more the features of an autumn than a summer, has not induced this *Calceolaria* to depart from its usual course of taking a "summer's rest." Its half-herbaceous habit would seem to account for this, yet it ought to have been more successful this season, when a moist soil and atmosphere must have supplied it with the food most in accordance with its wants. *Anagallis* has been good, though occasionally a plant would die off, and that often when most wanted, to the disfiguring of the bed. *Ageratums* have been more prosperous, and less rambling than might have been expected; but *Verbenas* have been very variable; some plants dying off near to others in the most robust health. However, as a whole, this class has been tolerably good, and they only need dry weather now to enable them to flower abundantly. I may, however, observe, that amongst the many plants which rabbits seem more especially fond of, this stands about first, and, consequently, I have suffered much that way in places where these vermin have access; and the best preventive I have been able to adopt is to frequently scatter the plants over with soot, or soot and sulphur. The caustic properties of the former of these ingredients makes the plant distasteful to the rabbit, while it accelerates its growth rather than otherwise. Most of the other bedding plants present a rankness of growth instead of abundant blooming; and such things as *Dahlias*, *Chrysanthemums*, and the like, are more than usually tall in consequence; and the same may be said of many herbaceous plants; but *Roses* have been, on the whole, good, except such tender kinds as had suffered from the extreme weather in winter, but this, as well as some observations on the vegetable garden, must be put off until another occasion.

J. ROBSON.

HARVESTING OF OATS.

THE harvesting of all kinds of grain is a most important part of farm management; although the Oat may be considered a somewhat inferior kind, as compared with Wheat, yet, upon some poor and bleak soils, it is almost the only sort of corn crop taken, and, under any circumstances, it ought to receive a due share of attention as regards securing the produce, in order to

preserve the greatest quantity of grain of the best quality, and to gather in the straw in the best condition, as fodder for cattle.

Sufficient attention is not paid, in very many instances, in selecting the sort of Oat best suited to the locality, for, if the prolific character of the sort is made the only consideration, and the early varieties are thus sown upon exposed situations, it is almost impossible to secure the crop without more or less loss, from shaking off the corn by the wind.

All the early sorts of Oat, such as the *Potato Oat*, the *Hopetoun*, the *Devon*, the *Black Siberian*, and *Winter Oat*, are prone to shed in the field, and require to be cut proportionably early on that account. The best guide is the colour of the straw; when this is for the most part tinged with yellow, the sooner the crop is cut the better—the grain will weigh heaviest, and the straw will make the best fodder, when there is a portion of sap still left, which, being dried in this state, adds to its nutritive value.

On the other hand, when the crop is allowed to remain uncut till the corn is quite ripe, and the straw white and brittle, loss must ensue, not only in the process of cutting and harvesting, but from other circumstances before alluded to.

The later varieties of Oat—viz., the *Black* or *White Tartarian*, or the *Copper-coloured French*, with some others—may be allowed to stand uncut, without any serious loss from shedding of the grain, for a considerable time after they appear to be ripe, and on this account they are often selected for growth upon soils exposed to the wind from the sea, and also upon hilly land in the midland districts.

I have found, upon some occasions, when labourers have been scarce, or engaged upon the more important work of cutting the Wheat crop, that the mowing these late sorts may be delayed, without great loss, until the workmen are at liberty; but, in these cases, there is always a diminution in the value of the straw as fodder, although not to the same extent as in that of the early varieties, for, although the straw of the late sorts may be quite yellow before cutting, yet there is always a greater deposit of sap, indicated by its deep-yellow colour when ripe. Hence, in some degree, we can account for its well-known superior value for feeding purposes. This crop often goes by the appellation of “loose corn,” arising, no doubt, from the circumstance of its being cut and harvested in a loose state, which method, in some seasons when the crop is light and cut early, may answer the purpose, and the produce be secured without loss. But under ordinary circumstances, with a good crop of straw, it is the best plan, and one which is coming more into use every year, to cut and tie the Oats into sheaves, in the same manner as is adopted for the wheat crop. If the crop is stout, and not laid or lodged by the weather, it is best to cut with the scythe, throwing the swarth to the standing corn; in this case, a sufficient number of women or boys should follow, separating the swarth into grips, which ought to be immediately tied and set up, thus allowing the mowers

to continue the work of cutting. When the crop is very bulky, and lodged and twisted together, it cannot be mown without loss; it is then desirable to cut it with the fagging hook, in the same way as is usually adopted for a heavy and laid crop of wheat, for there is less danger of shaking out the grain when the hook cuts away from the crop, which is also in a much better state for tying.

After being tied into sheaves of a moderate size, say about twelve inches in diameter, they should be set up; about twenty sheaves together is the best number, the shocks being more liable to blow over with the wind when they contain a less number.

When the crop has been managed in this manner it will take an immense quantity of rain and rough weather without much loss or damage. I have known Oats remain in the field, set up in this way, from three weeks to a month, without receiving any damage worth notice.

Whereas, had the crop been lying in swarth, it must have received great injury, not only by sprouted corn, but in the loss of grain, from constant turning of the swarth. And the straw at the same time having been exposed to the alternate changes of the weather would prove valueless as fodder.

I am aware that objections are raised by some parties against this mode of cutting and tying the crop, because it is said to be more expensive; but this applies to the manual labour alone, for if the cost of the whole operations of harvesting be reckoned, it will be found to be quite as cheap a method, for although cutting and tying will cost as much again as mowing and forking the crop, yet the tied corn may be carted at half the cost of that in a loose state, which will make the expenses about the same, entirely irrespective of other advantages.

It must, however, be borne in mind, that loose corn is generally in a fit state for carting several days earlier than it is when tied into sheaves, and it will require some care and attention to prevent heating in the stack, for it must be admitted that no kind of corn is so liable to heat as sheaved Oats, more especially where clover is found amongst the crop; and as it is usual to sow clover seeds with this crop, care must be taken to give the clover sufficient time to get quite dry previous to carting.

Much will depend upon the time the crop will be required for thrashing, as to the size, &c., of the ricks, small ones being most convenient, and earliest in condition. When Oats are intended to be kept till the following year, the rick should be placed upon a stand, for mice do more injury to Oats than to any other corn.

JOSEPH BLUNDELL.

SEEKING REST AND FINDING NONE.

By the Authoress of “My Flowers.”

SUPPOSING, for one moment, that there was no judgment to come; supposing, for one moment, that we shall not be called to render up an account of our time, our money, and our works—supposing this; yet is there anything here

below worth toiling for? Is there anything in itself worth the labour and sorrow, and wear and tear of mind and body, that we see so many people bestow on them? Is there anything in itself that recompenses us when we have gained possession? Do we not either lay it down, and turn off after something else; or else sit down and sigh over it?

A great many years ago, a young man, a stranger, entered the village, and asked the first person he met if there was any chance of getting work at the mill? He was a miller's man by trade, out of employment; he was very hungry, and had no money to buy a meal. The answer was, that he was very likely to be successful at the mill; and the man kindly gave him two-pence, out of his little pittance, to buy him a crust of bread and cheese. The young man was fortunate enough to obtain work at the mill; he was a useful, active labourer, and soon got comfortably on.

About the same time, a young woman, of mean appearance, stopped "the widow indeed"—then a middle-aged wife and mother—and asked her if she could tell her where a cheap lodging might be had. Her husband was taken on to work at the mill, they were very poor, and she should be thankful to get one little room to live in, and support herself with needle-work.

When we first remember Roberts, he was the head miller of the village—a stirring, bustling, rich, prosperous, grinding, money-making man. His wife was all over flour, with a keen eye, a clear, sharp voice, and a wit, or rather a worldly spirit, sharper still. They kept a little shop, and it was curious, and very painful, too, to see how she weighed and measured. The single raisin, the crumb of lard, the shaving of cheese and bacon that turned the scale, was taken carefully away from the poor customer, and put back. There was no favour shown to the poor destitute—he had his right, to be sure, but he paid dearly for it; and if there was an error between them it was not on his side.

The consequence of all this hard work, pinching, grinding, and saving, was, that Roberts and his wife had raised themselves up into worldly plenty. They had no children, and nothing to do but take care of themselves. He never, by any chance, went to church, and, therefore, probably never read God's Word; so that he was little likely to know what manner of man he was in the sight of a holy God.

Mrs. Roberts was, after a few years, attacked frequently with soreness in her legs. She used to limp and hobble about when she ought to have laid by; but money and gain was her idol, and she would not give in as long as she could drag herself from the parlour to the shop. When she was fairly compelled to sit still, she sat with the doors open, so that she could scream at the people as they stood at the counter; and I have often heard her shrill voice directing affairs of state, while she sat unwillingly retired.

Roberts himself, in time, became the victim of some internal complaint, which was tedious, and very painful. He suffered greatly in body, and in mind, too, for he was a worshipper of mammon, and mammon speaks no word of peace to a sick bed. The visits of his clergyman were frequent and anxious, but no fruit was to be seen. Roberts was restless and unquiet; he was carried about from one place to another, but nothing, of course, satisfied him. He could not stay in his own house, but when he was gone he wanted directly to be brought back again. Poor fellow! How terrible it is to be "seeking rest, and finding none." His bread and flour had been his gods; and now, like Baal, when he called upon them in time of need they did not hear.

The last time he desired a change he was lifted into the cart, propped with pillows, and wrapped up in a blanket. They got him to a town about twenty miles off, but there the trumpet call was heard! Roberts was called to a drearier journey still, from which he would never return.

Another small shop-keeper, in the same village, died somewhere about the same period; but how different his end! It was awfully sudden; yet evidently blessed. He was a man of real and deep piety; he had known and served God in the sight of men for years, and his character was proved and known. He had not prospered much in worldly circumstances, but he had a large family, and since their father's death they have gone steadily and quietly on, and are all doing tolerably well. Reynolds had been sitting with a few friends one evening; they had all joined in prayer together, as they were accustomed to do; and on

again taking their seats they were speaking on spiritual subjects. Reynolds turned to his nearest neighbour to make a remark, and as he placed his hand on his friend's knee, to enforce what he was about to say, the hand of death was laid upon his lips. He, too, heard the trumpet call, and his spirit sprang to obey it. Without one instant's preparation, he passed from prayer to everlasting praise!

Perhaps, no two deaths could be more striking in their different ways than those of Roberts and Reynolds. Sudden death is always awful; but to a good man—that is to say, to one who is clothed in a righteousness *not his own*—it comes without any terror. Reynolds' treasure was in heaven; his bags had been moth-eaten on earth; but his *treasure* was safe. Poor Roberts had nothing but earthly bags to look to. They were all full of flour, but there was no *treasure* in them. He did not even find worldly comfort in them; there was no "money in the mouth of the sack" to reward him, even on this side the grave, for all his labour and toil. He could rest no-where—he could enjoy nothing—he could only go wearily about, "seeking rest, and finding none."

Reader: we are directed to be "not slothful in business;" but there are two directions that come with it—"be fervent in spirit, serving the Lord." He is a Master who pays with usury—He doubles, and trebles, and quadruples that which He promised to pay; but *mammon* cheats us of every penny. Work as we will for him, he scoffs and sends us empty away. All the possessions, all the good things of this world, are nothing *in themselves*. Without God's blessing we cannot enjoy them. What is food to a loathing stomach? What is mirth to a broken heart? What is silver and gold to a dying sinner? It cannot buy an hour in which to repent; it cannot buy the peace of God, which can alone smooth the pillow. "It is in vain for you to rise up early, to sit up late, to eat the bread of sorrows; for so he giveth his beloved sleep." To poor Roberts it was indeed "bread of sorrows;" so will it be to every one who is a slave to *mammon*. He had grasped and clutched everything; he had plenty of silver and gold; but all they did for him was to take him about in a cart, propped with pillows, "seeking rest, and finding none."

Reader: be "not slothful in business; fervent in spirit, serving the Lord; rejoicing in hope; patient in tribulation; continuing instant in prayer."

DEVON AND CORNWALL POULTRY EXHIBITION.

THE West of England cannot now be reproached as being backward in the poultry cause, for, notwithstanding the large gathering that took place, under the auspices of the Bath and West of England Agricultural Society, at Pennycomequick, near Plymouth, in June last, another meeting was held at the same town, on the 3rd and 4th inst.

The committee were most fortunate in securing an admirable site for their Exhibition, which included a department for horticultural produce, to which Messrs. Lucombe and Pince, and Veitch, of Exeter, contributed largely, and among their collections, we need hardly add, were many of the most recent introductions, admirably grown, and most effectively arranged.

A glance at the *Dorking* pens at once proclaimed the absence of Capt. Hornby's name from the list of exhibitors in that class. The old birds were but indifferent, but among the chickens there appeared a singularly good pen of "White Dorkings," belonging to Miss Newman, of Manhead, with which it would, indeed, be difficult to find fault.

Spanish do not appear on the prize list, either in the classes for old birds or chickens.

In *Shanghaes*, the entries were numerous, and several very good pens of both old and young birds were present, in their respective classes. Mr. Channing, of Heavitree, near Exeter, exhibited birds that would have stood high among any competitors, both with respect to form and colour. Their condition, also, considering the season of the year, was remarkably good. The hens in pen 17, belonging to Mr. Eastlake, of Mannamead, near Plymouth, which took

the second prize in the older class, were far above an average degree of merit. They deserved, indeed, a better male companion.

With the Shanghae chickens, the judges must have carefully investigated the relative excellence of the competing pens, for seldom have we seen a better collection. Here, also, the first prize again fell to Mr. Channing; whilst equal second prizes were awarded to R. Daw, Esq., and R. T. Head, Esq., both from the neighbourhood of Exeter. The more genial weather of the last ten days has done much for the growth of all chickens, and Shanghaes, especially, have not been backward in profiting by this change from the previous unusual cold and wet of the present summer.

Among the dark Shanghaes were some good birds, but the class was below the mark of their lighter relatives. The old error of placing cinnamon cocks with partridge-coloured hens was repeated in more than one instance.

Mr. Treby had some good "black red" *Game* chickens, and pen 81, belonging to Mr. E. Burton, of Truro, contained a very promising young lot of *Silver-spangled Ham-burgh* chickens.

Mr. E. Vivian, of Torquay, had some good *Black Polands*, but the season of the year was so against their appearance, that the hens' topknots were sadly denuded, and it would have been impossible to pronounce an opinion on their merits as they were then subjected to inspection. The others in this class were below par.

The *Silver Polands* were rather spotted than spangled, and in one pen the comb was infinitely too large and coarse.

Bantams, at least in the laced varieties, exceeded the proper standard of weight, and great merit must exist to counterbalance any excess above seventeen ounces for the male, and fourteen ounces for the female bird. With such energetic poultry fanciers as the inhabitants of Plymouth have now shown themselves, these, and other similar, failings will, doubtless, be rectified before another season brings them again into competition.

In *Aylesbury Ducks*, Mr. William Brown, of Shute, Devonshire, had some very good specimens, and those belonging to E. Vivian, Esq., were most deservedly commended. The admirers of these birds should carefully bear in mind, that a clean flesh-coloured bill is an essential characteristic of this variety, and its absence will always suggest either some departure from the pure breed, or the selection of parents that have transmitted this defect to their progeny. A perfectly clean-billed *Aylesbury*, having access to water flowing from peat or moss, usually manifests its discolouring influence at an early period, but occasionally it is also the result of age. Nevertheless, an *Aylesbury* duck, to stand "A 1," must have a spotless bill, under any circumstances.

However favourable our opinion of the *Aylesbury* duck, we would gladly persuade our Plymouth friends to make trial of the Rouen, and Buenos Ayres varieties, both of which are excellent in their way, the former, especially, in regard of weight, the latter with respect to flavour.

Among "extra stock," we noticed a pen entered as "*Brahma Poutra*" chickens; one only of its occupants, however, had the distinctive feather-markings of that race—the silvery ground and dark pencillings on the hackle, breast, and wings; the other two had a yellow tinge, unlike the usual character of those birds. Pen 114, contained "*Turkey fowls*," why, or wherefore, so called, we know not, for so far as resemblance to the former bird might be supposed to confer the designation, they certainly had no claim whatever to it. More extraordinary products of the poultry-yard, it must be confessed, we never witnessed. Let us picture to ourselves one of Mr. Fairlie's *Dumpies*, with a very full lark crest, and a comb either rose, cupped, or single, for all those forms were here present, and the occupants of this pen are there faithfully portrayed. Extreme singularity, we presume, is the sole foundation for their claims to notice, and, if what we hear be true, that they are sometimes seen with heavily-feathered legs, they must, in this respect, leave all competitors far behind.

We regretted the smooth legs of Miss Dyott's *Black Shanghae*; for her birds, the cock in particular, have much to recommend them; rarely, indeed, have we seen a male bird of this colour so free from a stained hackle, and his figure also was in good form.

The *Pigeons* were very good, and shewn, moreover, in good order. The Black Carriers of Mr. Square, were objects of general admiration; and White Fantails, Pouters, Jacobines, Trumpeters, and Almond Tumblers, had admirable representatives of their respective families.

We may certainly congratulate the officers of the "South Devon and East Cornwall Poultry Association," on the result of their first exhibition; although, as ever happens in these first essays, there were some points in which exhibitors fell short of what was required of them; but even these mishaps serve a good purpose, and point out errors that might not otherwise have been so soon detected. Another year, birds will be better matched, and the recurrence of faulty specimens will not mar the appearance of companions of higher caste. Condition, too, will be more studied, and much is implied in this term; for, if it be supposed that mere weight, increased by high feeding, is here alluded to, nothing can be further from our intention, for birds so fattened, ought, in our opinion, to suffer immediate banishment, and even the extreme sentence of the law—a fate which their owners would thus seem to have especially in view for them. Though growth and feather are all concerned with this word "condition," as applied to the poultry-yard, and though the interval may be great between its particular application to a fowl, or a horse, there is yet much in common, which will, day by day, become more apparent to those who really study poultry as a subject deserving of their serious attention.

Judges of poultry must pronounce their sentence, on such occasions, according to the state in which the various classes are ranged before them. Now triumphs are too often anticipated, because a pen has proved successful some short time previously, or because assurances of their excellence have been too readily received; but how unwise to reckon on such an argument. Possibly the birds may have passed into the hands of another owner, whose system of management is far behind that under which former victories were achieved: then, again, although in this interim equal attention has been paid to their wants, still, their form and feathers may have suffered some retrograde movement, either disease may have been at work, or a severe moult may have reduced them to a tattered state, unfitting them for competition; or again, as sometimes happens, feathers and markings have been permanently injured. Hence disappointment, although they stand alone without competition in their class.

August is by no means a season for poultry to appear to advantage; we would suggest, therefore, to the Committee of the Society, whose recent meeting we have now recorded, how far their arrangements may another year permit the selection of a more appropriate month for their annual meeting. Whatever may be decided on in this respect, the public are greatly indebted to Messrs. Hunt and Hancock, the secretaries, as well as to those gentlemen of the Committee by whose continued exertions the late exhibition at the Green Bank has been carried out. In their scheme for 1854 they have our hearty wishes for success.

Judges, it will be allowed, occupy no enviable post; and when it is asserted that their standard has been too high, and that some classes have been harshly passed by without mention, it should also be remembered, how unwise a step it has ever proved to stamp with the verdict of approval such birds as cannot be held forth as models for general imitation. Thus, where any one material deficiency exists, we shall still think that the honours of the prize-list are unwisely bestowed. In following out such a course, errors and defects are certainly noticed, but at the same time remedied, and the lessons thus gained are the surest foundation for ultimate success.—W.

JUDGES.—The Rev. W. W. Wingfield, Rector of Gulval, and Editor of "The Poultry Book." James Furneaux, Esq., Swilly, near Plymouth.

Class II.—DORKING CHICKEN. (For the best Cockerel and two Pullets.)

First prize, Miss Caroline Newman, Mamhead Park, Starcross, Devon. (White.) Age, two months and twenty-two days. Second prize, Mr. D. Hoskins, Bristol and Exeter Railway Station, Exeter, Devon. Age, seven months.

Class V.—COCHIN-CHINA.—BUFF OR CINNAMON. (For the best Cock and two Hens of any age.)

First prize, Mr. W. L. Channing, Heavitree, near Exeter. Age, cock

and hen, one year each; hen, age unknown. Second prize, W. Eastlake, Esq., Mannamcad, Plymouth. Cock and hens. Age, eight months and two weeks.

Class VI.—(COCHIN-CHINA CHICKEN.—BUFF OR CINNAMON. For the best Cockerel and two Pullets of 1853.)

First prize, Mr. W. L. Channing, Heavitree, near Exeter. Age, five months. Second prize, R. Daw, Esq., Mount Radford, Exeter. Age, four months. Second prize, R. T. Head, Esq., The Briars, Alphington, near Exeter, Devon. Age, six months.

Class VIII.—COCHIN-CHINA CHICKENS.—DARK. (For the best Cockerel and two Pullets.)

First prize, Mr. John O. Backwell, 99, Navy Row, Devonport. Age, four months and two weeks. Second prize, Mr. William Brown, Redgate Farm, Shute, Devon. Age, four months and two weeks.

Class XII.—GAME CHICKEN. (For the best Cockerel and two Pullets of 1853.)

First prize, Paul Ourry Treby, Esq., Goodamoor, near Plympton, Devon. Age, three months and three days. (Black red.)

Class XIX.—SILVER-PENCILLED HAMBURGH. (For the best Cock and two Hens of any age.)

Second prize, W. C. Hodge, Esq., Crescent, Plymouth, Devon. Age, one year and two months.

Class XXIV.—SILVER-SPANGLED HAMBURGH CHICKEN. (For the best Cockerel and two Pullets.)

Second prize, Mr. Edward Burton, Tregolls Cottage, Truro, Cornwall. Age, two months.

Class XXVIII.—SILVER-SPANGLED POLAND CHICKEN. (For the best Cockerel and two Pullets of 1853.)

Second prize, Mr. W. George Courtis, 4, Lipson Terrace, Plymouth. Age, two months and twenty-one days.

Class XXXIX.—BLACK BANTAMS.

Second prize, Mr. W. Connett, Magdalene Bridge, Exeter. Age, two years.

Class XLI.—DUCKS.—WHITE AYLESBURY. (For the best Drake and two Ducks of any age.)

First prize, Mr. William Brown, Redgate Farm, Shute, Devonshire. Age, Drake nineteen weeks. Ducks, each two years. Second prize, Mr. William Brown, Redgate Farm, Shute, Devonshire. Age, two months.

Class XLIII.—DUCKS.—MUSCOVY. (For the best Drake and two Ducks of any age.)

Second prize, Mrs. St. John, Ideford Rectory, Chudleigh, Devon. Age, Drake three years. Ducks, eighteen months.

Class XLVII.—PIGEONS.—CARRIERS. (For the best Pair.)

First prize, W. J. Square, Esq., 14, Portland Square, Plymouth.

Class XLIX.—BEST PAIR OF POUTERS OR CROPPERS.

First prize, Thomas Jeffry, Bath Street, Plymouth. Age, two years.

Class LI.—BEST PAIR OF FANTAILS.

First prize, Frederick C. Bryant, Esq., 2, Lipson Terrace, Plymouth. Age unknown.

Class LII.—BEST PAIR OF JACOBINS, OR CAPPERS.

First prize, Mr. William Beer, 20, Tavistock Street, Stoke. Age, eighteen months.

Class LIII.—BEST PAIR OF TRUMPETERS.

First prize, Mr. Edward Burton, Tregolls Cottage, Truro, Cornwall. (White.) Age, two years.

Class LIV.—BEST PAIR OF ALMOND OR ERMINE TUMBLERS.

First prize, Mr. W. L. Channing, Heavitree, near Exeter. (Almond.) Age, one year.

SHRUBLAND PET GERANIUM.

I HAVE had twelve plants of "Shrubland Pet" Geranium turned out about two months. The plants are strong, compact, and vigorous; very healthy, and the foliage is very beautiful, but at present there is no blossom; there may be one or two buds, but not more, on all the plants.

There are two or three dozen plants now at the nursery whence mine were procured, which have been kept in pots, and on which there are about a dozen blossoms. Can you explain this?

From Mr. Beaton's account of his pet, I expected, at least, to have plenty of bloom, although each flower might be small. I looked, in short, for a diminutive Unique.

Ought there not to be an agreeable scent in the leaves?

Will you oblige me with your opinion on the above, with a short description of the genuine plant, as it may be that mine is only an imitation, although, from the respectability of the place whence I had it, such is hardly likely to be the case. Indeed, I believe the original plant came from Messrs. Hendersons'.

The flower on those I have seen is very small and insignificant.—H. P., Norwich.

[I am rather pleased than not, that I have this opportunity of winding up the story about the *Shrubland Pet*, and more so, as the above letter is from a Norwich Correspondent, because it was named by a lady in that quarter, who saw it at Shrubland, in the little bed where it was the gem of that season, and was admired by every one who saw it. Still, if I had remained longer in that garden, no one had ever heard a complaint about this plant, as no one who did not admire it on the spot would have received a cutting of it as long as it was in my hands. All who know me must know that every one of my seedlings were given away without money, or any other consideration whatever, and that if ever I recommended any of my pets it was always with this provision—"Unless you like it when you see the flowers, I shall take it back again." Surely, then, under such circumstances, I could do just what I liked, as if the plants were my own, as they certainly were not, but the property of my worthy employers, who never interfered with me in the least about all my seedlings, further than showing their pleasure when I had anything new or good, or that any one of their friends admired, whether it was good or not, so that they could give or promise cuttings of them to such friends or visitors.

Well, then, in one of my appeals to amateurs and young gardeners on the subject of cross-breeding, not on the subject of flower-gardening, I mentioned the *Shrubland Pet* as much and more for the purpose of stimulating them in pursuit of a very different cross, that of *Capitatum* and *Unique* (see vol. vii., page 239); and I had no more idea then that what I said would have been turned to an unworthy purpose, for the sake of worldly gain, than that I should dine with the man in the moon. The worst that I could anticipate then was, that the plant would be returned on my hands if I gave away a cutting of it on my own recommendation; and even that I could hardly expect. No one returned *Punch*, but many could do no good with it, and still I maintain it is the best of that strain where the soil suits it; and I do the same about the *Shrubland Pet* in its particular strain. But when I saw that four persons, in different parts of the country, came forward to claim the credit of having had *Shrubland Pet* from seeds before me, I mentioned the fact in these pages, and washed my hands of it, and now I am too old and too independent to allow it to be even supposed that I ever said a word about it, or about any other seedling or plant, upon selfish motives. Surely, I may be excused, therefore, for not volunteering a gratuitous opinion of it as a trade plant last year, after learning that Mr. Henderson, of the Wellington Road Nursery, had given twenty guineas for the stock of it. I may now say, that four distinct plants go under the name of *Shrubland Pet*; that three of them are not true. The true one is a rosy-purple small flower; and if the kind is planted in poor dry soil it will give as much satisfaction, to those who like that style, as *Punch*, on similar soil, gives to others. But it was as one link in the great chain of hybridizing that I looked favourably on the *Shrubland Pet*, and I shall always back it in the strain to which it belongs until we have a better one.

We refuse in these pages lists of plants, over and over again, to correspondents, because we have no standard whereby we can be sure to please all tastes, or to suit all soils. Here is H. P., for instance, at Norwich, who describes this flower as "small and insignificant;" yet I could give him the names of a lady and a gardener, who take many prizes at that very place, and who called a bed of it "the most charming little thing of the season," and the two had cuttings of it from me long before Mr. Henderson bought it. Perhaps we are all right.—D. BEATON.]

CROSS BETWEEN SHANGHAE AND SPANISH FOWLS.

In page 114 of *THE POULTRY BOOK*, I find the words, "it has been proposed to try a cross between the Spanish and Shanghai;" and, in consequence, I beg to forward you the result of the cross; I having, on the 21st of August, 1852, purchased from a poulterer in this island, three birds, one

cock and two hens, bred by a Mr. Pope (now in Australia), between a Shanghae cock and pure Spanish hen. The cock is a black red, about 8lb. Jersey weight; one hen is black entirely, about the same weight, and the other hen about 7lb. Jersey weight, with a partridge breast. No. 1 has laid 320 eggs, and attempted to sit for the first time to-day (July 20th). No. 2 commenced laying three days after I purchased them, and has laid 300 eggs without attempting to sit, both having laid during their moult and the winter. In fact, they are never idle; they both lay fine eggs; No. 1, perfectly white eggs; No. 2, pale chocolate coloured.

I have tried to breed them back, that is, the hens with a Shanghae cock, but at present without success. The cock with a Spanish hen has bred freely, but not with a Shanghae hen as yet. However, they (the three) will breed together, and have produced fine chickens, which have attained a large size early, and of good flavour and colour, equal to a pure Spanish.

As regards the Shanghaes, of which I have several varieties (and amongst them a magnificent grey or variegated breed direct from Shanghae), I may say, I am at present unable to find their match as sitters and good layers, with the exception of the white birds, most of their eggs being bad, and hard to rear the chickens.

I feed all my poultry, which are about 200 and over, on barley-meal twice a day, and on oats once, with a good run of grass, &c., and for the last year have had but one sick, a Punched cock with white comb, and from the receipt in the book, he is perfectly cured already.

My birds direct from China have not suffered at all, though such a severe winter. Should this be of any service to the poultry fancy now, or should I at any future time be able to assist, I shall be but too happy.—W. WOODFORD, *Upton House, Jersey*.

BRAHMA POUTRAS.

THE parents of the chickens which I exhibited in Baker-street, are not the same as those which I exhibited at Birmingham. I very soon discarded the latter pair, from a conviction that they were not of the pure, uncrossed stock of the original American birds, and from a further belief that the original birds were neither more nor less than a new variety of Shanghae, and not a new and distinct breed, as had been represented, and which, from the anomalous appearance of the combs, &c., of the birds I exhibited at Birmingham, I was then, and for some short time after I had received the lot of ten birds from America, rather disposed to think might be the case. I do not at all wonder at the opinion you express of their being Shanghae, "with a slight cross of Malay." Such would be my own opinion, had I nothing to judge from but the medley of shape, points, and colour in the birds represented as genuine. It is, however, my *honest* conviction, that there is, in the original birds in America, how, or whencesoever introduced there, a *bona fide* variety of *Gray Shanghae*, as distinct from others as is the White Shanghae, and without the smallest cross of Malay or any other fowl. Moreover, I think that they are very superior to many of our strains of this breed. It is but an opinion, however, and the arguments which have led me to it might not suffice to produce the same belief in others. There is, no doubt, a similarity between the Chittagong and these birds, but there are distinctive differences in each; and so well is it recognised in America, that more than double the price is paid for what are called the true Brahmas. In fact, the rage there for these birds is unprecedented, now, partly, no doubt, owing to the noise made about those sent to the Queen, but long before that the rage had begun, and they were then generally acknowledged to be the best fowl going. The subjoined is an extract from a paper received only yesterday, from the United States.—W. CUST GWYNNE.

EXTRACT FROM THE "NORTHERN FARMER."—"How the public are to avoid being cheated in the sale of crosses we are at a loss to divine. We fear that thousands of dollars will be paid for spurious fowls, next fall, under the name of Brahma Poutra. The excitement in regard to these fowls is immense, and the demand for eggs at six dollars (twice the price of eggs of any other breed there) is enormous.

We could have sold two thousand dollars worth if we had had the fowls to lay them."

[We emphatically warn our readers against following this American folly. We have just received a narrative of the history of some of the so-called Brahma Poutras now in England. We will publish it next week.—ED. C. G.]

SEA WEEDS.—No. 7.

(Continued from page 370.)

I stood upon a smooth and sandy shore,
On one of autumn's bright and sunny days;
The sea was clear as crystal—hush'd its roar,
And distant mountains softened by the haze.

Green were the waters, and the sky so blue,
Reflected in them, caused a lovely hue.
Huge porpoises were rolling o'er and o'er,
And fishermen were busy on the shore
Mending their nets, to "Cast into the deep,"
That they of Ocean's stores their share might reap;
While dove-like Mews were hovering o'er the sea,
Dipping their wings and feet luxuriously.

ORDER 5.—CHORDARIACEÆ.

"OLIVE-COLOURED, with a gelatinous frond; spores attached to the filaments, concealed within the substance of the frond."—*Harvey*.

1. CHORDARIA.—*Ag.*

1. CHORDARIA FLAGELLIFORMIS (Whip-shaped).—Frond thread-like; branches alternate; colour dark olive. In the water this plant appears to be fringed with very fine fibres, which make it feel slimy.

2. C. DIVARICATA (Outspread).—Fronds vary in length, from one to three feet; the branches spreading from a centre; like *C. flagelliformis* it is slimy, but of a lighter olive. In deep water. At Carrickfergus.

2. MESOGLOIA.—*Ag.*

"Frond thread-shaped, much branched, gelatinous; fructification elliptical spores; name signifying middle and viscid, from the gelatinous axis."

1. MESOGLOIA VERMICULARIS (Worm-like).—A clumsy-looking plant, the frond thick, very like greenish worms. Common. One to two feet high. On rocks.

2. M. GRIFFITHSIANA (Griffiths).—"Rare. South of England and West of Ireland. Of a pale olive-green; fronds from 8—16 inches high."



3. *M. VIRESCENS* (Greenish).—A beautiful but not uncommon plant, growing on rocks or on other *Algæ*. Colour a pale yellow-green; frond tender, slippery, and much branched. Dr. Landsborough speaks of it as being very common in the West of Scotland, and says that a branch of it under the microscope is very interesting. The plant from which the accompanying plate is taken is from the Ayrshire coast.

3. LEATHESIA.—Gray.

"Frond globose; fructification oval spores. Name in honour of the Rev. G. R. Leathes."

1. *LEATHESIA TUBERIFORMIS* (Tuber-form).—"Fronds olive-coloured and tuberous, when young, filled with cottony fibres."—Harvey.

"After a breeze in summer it may be seen in heaps in the little bays, not unlike bunches of hops."—Dr. Landsborough.

2. *L. BERKLEYI* (Berkley's).—A small and curious plant, but not a pretty one. Found by the Rev. M. J. Berkeley, at Torquay. On rocks.

4. RALFSIA.

"Frond coriaceous-crustaceous, fixed by its interior surface, concentrically zoned; fructification depressed warts, scattered over the surface." Name in honour of John Ralfs, Esq., of Penzance, the well-known author of a work on British Desmidiæ, &c.

1. *RALFSIA VERRUOSA* (Warted).—Growing on rocks, in lichen-like patches; covered with warts. The fruit is rare, and not easily discovered. Colour dark brown, and the substance leathery.

5. ELACHISTEA.

"Fronds parasitical, consisting of a dense tuft of free, simple articulated, olivaceous filaments, rising from a common tubercular base: fructification pear-like spores." "Name from a word signifying the least, from the small size of the plants."—Harvey.

1. *ELACHISTEA FUCIOLA*.—Very common on *Fucus vesiculosus* and *Fucus nodosus*; the tufts are about an inch long, and of a brownish-olive colour.

2. *E. FLACCIDA* (Flaccid).—Common.

3. *E. CURTA* (Cut short).—Parasitic on fuci. Not a well-known plant.

4. *E. PULVINATA* (Powdered).—Very small round tufts. Parasitical on *Cytosira ericoides*. A beautiful object for the microscope.

5. *E. STELLULATA* (Small starred).—A rare parasite, growing on *Dictyota dichotoma*. Very small star-like tufts. Found in great abundance by Professor Balfour and the Rev. Dr. Landsborough when dredging in Lamash Bay, Arran.

6. *E. SCUTULATA* (Shield-bearing).—On *Himanthalia lorea*.

7. *E. VELUTINA* (Velvety).—"It often accompanies the last species, to which it is closely allied."—Harvey.

6. MYRIONEMA.—Grev.

"Mass gelatinous (exceedingly minute), effused; composed of very short, clavate, erect, mostly simple filaments. Fruit, capsules at the base among the filaments. Name from two Greek words, signifying ten thousand filaments."—Greville.

1. *MYRIONEMA STRANGULANS*.—This minute parasite grows on *Ulva* and *Enteromorpha*; on the former it has the appearance of a small brown patch, and on the latter forming a ring round it.

2. *M. LECLAUCHIERII*.—Round patches on decaying fronds of *Rhodomenia palmata* and *Ulva latissima*.

3. *M. PUNCTIFORME* (Puncture-shaped).—On *Ceramium rubrum* and *Chylocladia clavellosa*. A fine object for the microscope.

4. *M. CLAVATUM* (Clubbed).—"On a thin purplish crust, which covers the pebbles at the half-tide level. The parasite is so much of the colour of the crust that it requires a microscope to detect it."—Capt. Carmichael.

Before proceeding to the next order of *Melanosperms*, or olive-coloured plants, it has occurred to me that at this season of the year, when so many of the *Algæ* are in full beauty, it might not be unacceptable to some of my readers

to be told an excellent method of floating these plants, and preparing them for the herbarium. So much of their beauty depends upon the manner in which they are spread out, &c., that it seems better to describe it.

Place on the table a basin of fresh water to cleanse the weeds from sand or other impurities. Put only a small portion of specimens into the basin at once, as some of the more delicate kinds soon decompose and are spoiled. Have ready a good-sized white dish or plate. Take a plant out of the basin and let it float in the dish of water; with a silver fruit-knife, or camels' hair pencil, spread the Sea Weed in the way in which it most naturally falls, cutting off old or ugly branches with a knife or small scissors. Then, having different sized pieces of good paper ready cut (and this is the best done at the stationer's, as the edges are better cut with his sharp knife), place the paper under the specimen, and hold it with the left hand while you arrange the plant with your fruit-knife in the right. Withdraw it gradually from the water, and place it in a slanting position, to allow the escape of the fluid; during this part of the process other specimens may be prepared in the same way. Before any part of the paper is quite dry, lay it upon a sheet of blotting-paper, doubled up into four; put as many pieces as will lie flat upon it, and then cover it with old muslin or calico, and then more folds of blotting-paper; repeat this, laying sheet upon sheet until you have finished all you have to do. Lay the heap upon a piece of millboard, and place another upon the top, tying a string round to keep them in their places; leave them thus for a few hours, then carefully remove them, and put them into dry blotting-paper and muslin. Now you may subject them to a gentle pressure until the next day, when the papers and muslin must again be renewed, and heavier pressure applied. This must be repeated until the plants are perfectly dry, when the more delicate ones will look like beautiful paintings. Let me again remind my readers of the importance of having good paper; that which is most like card-board, i.e., not porous, is the best. The name, date, and locality, should be written on the papers with the specimens. All this sounds rather troublesome, but there is nothing done well without, and the beauty of the specimens will be an ample recompense. It is useful, too, to have our patience kept in exercise, even by little things. Like the muscles in the arm of a blacksmith, patience becomes stronger by exercise, and perseverance in the pursuit of what is useful is sure to have its reward. Things which seem difficult, or almost impossible, at first, become easy after repeated attempts, and there is great pleasure in overcoming a difficulty.—S. B.

(To be continued.)

HEN COCKS, AND CROWING HENS.

It has long been known to naturalists, that hen birds, of various species, occasionally change their plumage and voice, becoming in both these particulars more or less like the males. This occurrence frequently takes place in the case of the common Pheasant. Some years ago, Mr. Yarrell made a series of dissections, and found, in every instance in which a hen Pheasant had assumed the male plumage, that there was disease of the ovary, which sometimes extended to the egg passage. The report of these cases was published by him in the Transactions of the Royal Society.

Not unfrequently, common hens, after laying well for one, two, or three years, suddenly cease laying, and at the same time their habits and carriage change, and their voice alters to a distinct crow, which closely resembles that of the cock. In these cases of crowing hens, there will always be found, on examination, a disease of the ovary.

The peculiarity which constitutes what is termed a hen cock, I regard as totally distinct from that above described. The phenomenon occurs not in old hens, but in young birds which have never laid; the most striking peculiarity being that the head, comb, wattles, and general habits of the cock are associated with the plumage of a hen.

By the kindness of one of your subscribers, I am in possession of a specimen of these remarkable birds, and, as

it may be interesting to have its history, I will relate it as far as it is known to me.

Last Christmas I forwarded to this gentleman a dark Dorking cockerel, and in acknowledging its receipt, he stated—"We have received the cockerel safely, he is truly a magnificent fellow, and has our unqualified admiration. We have ordered three pullets from Bailey's to mate with him." Some time after, in March, he wrote to me, stating that one of these three pullets had become very red and large in the comb and wattles, and had not laid; that he suspected some disease, and had, therefore, forwarded the bird to me.

On receiving the fowl, I found that it was not ill, but was of the most vivid brightness in the comb. Its present appearance may be briefly described. The shape and carriage of the body, the plumage of the hackle and tail, are precisely those of a hen. The head, which is extremely beautiful, resembles that of the cock, being furnished with a single comb nearly four inches in length, from front to back, and wattles two inches long. The general bearing is that of a male bird; he calls the hens when he finds a worm, which is immediately surrendered to them, and he chases the young cockerels about the yard, where he reigns paramount. Formerly he was the object of persecution of a heavy Dorking cock, which has latterly been removed from the run.

My own opinion of his internal structure is, that he is a male bird, with some peculiar arrest of development in the plumage, and that he is, therefore, totally distinct from a crowing hen. I regard him as somewhat akin to those varieties of Game cocks formerly termed Hennies, and I intend to try whether the breed is capable of continuance, and am anxiously looking for the period of moulting, to see what change it will effect in his plumage.

Thinking that some of your readers may be interested in the case, I have entered him in the Surrey show, and will forward with him a hen, with that condition of the ovary before alluded to, so that what I regard as a true hen cock, may be compared with a mere crowing hen. I would mention, that the plumage of the hen cock is not in the cleanest possible condition, as during the time he was in town to be daguerretyped, by Mr. Sheehan, of Bramah Poultry notoriety, he stepped into a paint-pot, the contents of which have hardly worn off.

Another point which I may allude to, is the condition of these two birds; should they continue in the state in which they are at present, it may, perhaps, prove to some who are sceptical on the point, that neither meat, peas, hemp seed, or greaves, are necessary to keep fowls in the highest possible health and condition.—W. B. TEGETMEIER, *Tottenham*.

DICLYTRA, NOT DIELYTRA.

I RECOLLECT, some twenty years since, seeing, in corrections for the first edition of the "Encyclopædia of Plants," which were sent to Mr. Loudon, that this genus ought to be spelled *Diclytra*, with the accent on the *i* (see *Gardeners' Magazine*, 1832, page 367). Mr. Loudon defended the former reading, by stating that Sir William Hooker, "in his 'Botanical Magazine,' No. 3031, remarks:—*Diclytra* is from *dis*, twice, and *elytron*, a cover; in allusion to the two petals terminating in a box or pouch. It is by mistake often spelled *Dieclitra*." The question about the right spelling was again mooted two or three times since, but a correspondent, in a recent number of the *Gardener's Chronicle* has set the question at rest, by a transcription from the original paper in which the genus was proposed. This shows that we were all wrong, and that *Diclytra* is the proper name; but let me give the paragraph in full.

"The *questio vexata* is solved beyond all possibility of doubt on reference to the original paper in which the genus was proposed. In the second part of the first volume of *Römer's Archiv für die Botanik*, page 43, 1797, is a paper on the genus *Fumaria*, by Dr. Moritz Balthazar Borekhausen, of Darmstadt. Amongst other genera, he proposes that of *Diclytra*, for *Fumaria cucularia*, L., resting its characters on the peculiar structure of the corolla, and the six distinct stamens." He adds, especially—"I have named the genus from *dis*, two, and *κλυτρον*, a spur, because the flower is so

clearly distinguished by its two spurs." Now, in the middle of the nineteenth, besides giving in to the true name, I would add, "especially," that it would be right and proper to have a law to compel the manufacturers of hard names to give out the derivation of them, as Dr. Borekhausen, of Darmstadt, did with this, in 1797.—D. BEATON.

CRYSTAL PALACE IN NEW YORK.

RESERVOIR SQUARE, on which it is erected, lies at the northern extremity of the city, west of the Croton Distributing Reservoir, and between that mighty mass of stone and the Sixth avenue. The precise distance from the Reservoir to the Sixth avenue is 445 feet, and the width, north and south, from Fortieth to Forty-second street, is 455 feet.

The main features of the building are as follows:—It is, with the exception of the floor, roof, and a portion of the dome, entirely constructed of iron and glass. The general idea of the edifice is a Greek cross, surmounted by a dome at the intersection. Each diameter of the cross will be 365 feet five inches long. There are three similar entrances—one on the Sixth avenue, one on Fortieth, and one on Forty-second street. Each entrance is 47 feet wide, and that on the Sixth avenue is approached by a flight of eight steps; over each front is a large semi-circular fanlight, 41 feet wide and 21 feet high, answering to the arch of the nave. Each arm of the cross is on the ground plan 149 feet broad. This is divided into a central nave and two aisles, one on each side; the nave 41 feet wide, each aisle 54 feet wide. The central portion or nave is carried up to the height of 67 feet, and the semi-circular arch by which it is spanned is 41 feet broad. There are thus in effect two arched naves crossing each other at right angles, 41 feet broad, 67 feet high to the crown of the arch, and 365 feet long; and on each side of these naves is an aisle 54 feet broad, and 45 feet high. The exterior of the ridgeway of the nave is 71 feet. Each aisle is covered by a gallery of its own width, and 24 feet from the floor. The central dome is 100 feet in diameter, 68 feet inside from the floor to the spring of the arch, and 118 feet to the crown; and on the outside, with the lantern, 149 feet. The exterior angles of the building are ingeniously filled up with a triangular lean-to 24 feet high, which gives the ground plan an octagonal shape, each side or face being 149 feet wide. At each angle is an octagonal tower eight feet in diameter and 75 feet high.

Ten large, and eight winding, staircases connect the principal floor with the gallery, which opens on the three balconies that are situated over the entrance-halls, and afford ample space for flower decorations, statues, vases, &c. The ten principal staircases consist of two flights of steps with two landing places to each; the eight winding staircases are placed in the octagonal towers, which lead also to small balconies on the tops of the towers and to the roof of the building.

The building contains on the ground floor 11,000 square feet of space, and in its galleries, which are 54 feet wide, 62,000 square feet more, making a total area 173,000 square feet for the purposes of exhibition. There are thus on the ground floor two acres and a half, or exactly 2 52-100; in the galleries one acre and 44-100; total, within an inconsiderable fraction, four acres.

There are on the ground floor 190 octagonal cast iron columns 21 feet above the floor, and eight inches diameter, cast hollow, of different thicknesses, from half an inch to one inch. These columns receive the cast iron girders. These are 26½ feet long and 3 feet high, and serve to sustain the galleries and the wrought iron construction of the roof, as well as to brace the whole structure in every direction. The girders, as well as the second story columns, are fastened to the columns in the first story by connecting pieces of the same octagonal shape as the columns, 3 feet four inches high, having proper flanges and lugs to fasten all pieces together by bolts. The number of lower floor girders is 252, besides 12 wrought iron girders of the same height, and 41 feet span over a part of the nave. The second story contains 148 columns, of the same shape as those below, and 17 feet 7 inches high. These receive another tier of girders, numbering 160, for the support of

the roofs of the aisles, each nave being covered by 16 cast iron semi-circular arches, each composed of four pieces.

The dome is supported by 24 columns, which go up above the second story to a height of 62 feet above the floor, and support a combination of wrought iron arches and girders, on which rests a cast iron bed plate, so constructed as to receive the 32 ribs of the dome. The light is communicated to the dome through the lantern, as well as from the sides, on which 32 escutcheons, in colored glass, representing the arms of the Union and its several States, or the emblems of the different nations, will form a part of the decorations. The immense space on the interior of the dome will be painted in imitation of fresco, the principal colors used being red, white, blue, and yellow. The ceilings are painted somewhat after the Moresque style, and the guards of the galleries and stairs are constructed of iron. They are very light and beautiful, and in fine harmony with the general appearance of the building.

The quantity of iron to be used for the building will amount to about 1,250 tons. The roof will cover an area of 144,000 square feet. The glass for the building will amount to 39,000 square feet, 9,027 panes, 16 by 34 or 38 inches.

On entering the building, the observer's eye will be greeted by the vista of an arched nave, 41 feet wide, 67 feet high, and 365 feet long; while on approaching the centre, he will find himself under a dome 100 feet across, and 118 feet high.

The general mode of erection by base pieces, columns, connecting pieces, and girders, is the same with that of the great Hyde Park building. But the construction of the arched nave and of the dome is of course entirely peculiar, and the general effect of the building is completely different. The London building was certainly deficient in architectural effect. The form of the New York edifice affords the requisite scope for a pleasing variety of embellishment, by which all monotony can be avoided, and allows a very economical use of the ground. The dome, independent of its effect in the interior arrangement of the edifice, will give height and majesty to the exterior.

The following are the objects which the architects appear to have striven to combine in their plan:—

1 The greatest possible area compatible with the ground employed.

2 Perfect safety and elegance of construction.

3 A well calculated and pleasing admission of light.

4 A variety of *coup d'œil* in the interior.

This building will compare, in point of size, and it is thought of beauty, with some of the greatest edifices of the old world; and until the extension of the Capitol at Washington is completed, it will be altogether the largest in this country. It is hoped that it will be a great permanent architectural ornament to the city.

THE BEE SEASON.

PERHAPS the present season has been the most remarkable for Bees known in this district for many years, the honey season having ceased on the 18th of June, the Bees having only worked and accumulated any honey on six days since that time. I have only had 5 swarms from 18 hives, and those between the 7th and 15th of June, though there were many May swarms about here, within a circuit of a few miles. In three of the swarms, at the present time there may be ten pounds of honey altogether; the other two have died this week of starvation; the hives being full of Bees and comb, but not a particle of honey.—A COUNTRY RECTOR, Tadcaster, Yorkshire.

DISEASES OF POULTRY.

EXHIBITION FEVER.

Now that the season for poultry shows has recurred, we may expect to hear frequently of the effects of this much and deservedly dreaded disease: its causes are evident—a large number of animals, fed previously to the highest possible condition, are crowded together under very unnatural circumstances for many days, and kept in a constant

state of excitement by the presence of visitors whose breath adds greatly to the impurities of the air. The result is a low fever of a typhoid character, similar to those formerly known as gaol fever, hospital fever, and diseases, which improved management, and ventilation &c., have almost banished from the dire catalogue of human ills. It may be asked, what are the conditions which would tend to prevent the recurrence of this formidable disease? They are, I believe, as follows;—

Firstly. The refusal to admit diseased birds, and their immediate removal on the first symptom of illness. At the late London show there were birds with chronic skin diseases admitted, and others labouring under profuse diarrhoea, which were not removed.

Secondly. The shortening of the time the birds are kept at the shows. A reform has partially been effected in this particular: that it was needed, those who have noticed the difference in the appearance of the birds on the first and last days of any show can testify.

Thirdly. A less stimulating system of feeding prior to their exhibition. This, however, is a matter which rests exclusively with the owners. If animal food, and, in particular, putrid greaves are employed, the degree of irritability set up must greatly predispose to disease. The owners may defend themselves on the principle that a man may do what he likes with his own; but not so the managers, who, during the time of exhibition, give the birds the strongest ale, in order to keep up their appearance to the end of the show, careless, whether or not they die the week afterwards. I am not alleging that ale was given to the fowls at the late London summer show, for I have not taken the trouble to enquire; but I am fully prepared to prove that the plan has been followed extensively at previous exhibitions. I regard it as a good feature in the Surrey Gardens approaching show, that the owners are requested to state what food they wish given to the birds; and if they would follow my advice, they would interdict animal food and beer, and stipulate for a supply of grain, meal, and fresh green vegetables.

Conceive, for an instant, the condition of a fowl accustomed to pure air and water, a green run, and nothing stronger than unmalted barley, suddenly plunged in a heated and impure atmosphere, fed on most stimulating food, and, to crown all, forced to undergo a three or four days debauch on bread and ale; and the surprize will be, not that any birds become diseased, but that all do not.

The investigations which I have been making in the matter of poultry diseases have attracted the attention of several of our leading pathologists; one in particular, who is well-known for his most patient researches into the nature of typhus, and other similar fevers, is desirous of ascertaining the microscopic morbid appearance in fowls suffering from exhibition fever, as it may throw some light upon human pathology; I am sure, therefore, I need no excuse in requesting any of our readers, who are near, soon to furnish me with a case or two, and, as the obligation is on my side, I may state that a fee will neither be expected or received.

Tottenham Middlesex.

W. B. TEGETMEIER.

P.S. Would the gentleman, who lately forwarded me a crowing silver-pencilled Hamburgh hen oblige me with his address, as I wish to communicate with him.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

TAKING HONEY FROM AN OLD STOCK (*A Constant Reader*).—The best time will be, perhaps, about the middle of September. If taken before that time the brood may not all be hatched. It may be done either by driving or fumigating the bees.—J. H. P.

MORTALITY AMONG BEES.—*A Country Rector* says, "On my return home, after a week's absence, I find two of my stocks of bees dead. Can

you explain it? One was a first swarm this year, hived in a box on Midsummer day. The other was a cast, hived in a straw skip in my absenc, about ten days after that date. Both were working very well when I left home on the 25th of July; on my return, on the 30th, both were dead. On lifting up the hives the bees were lying dead on the floor-board, an inch thick; a few wretched survivors were crawling stupidly about the combs. The queens were alive. There was not a particle of honey in the comb. The swarm and the cast were from the same parent stock." Your bees died from starvation most certainly. We have heard of several similar cases where the bee pasturage is not good.

WINTERING CUTTINGS (S. Y.).—You can winter cuttings of all the bedding Geraniums in the room you mention quite well; also hundreds of old Fuchsias, Scarlet Geraniums, Salvias, Lobelias, and, in short, anything in a dormant state, with the cuttings on the stage facing the window; that is, on the supposition that the room is perfectly dry, and that you can guard it against frost. The room of our correspondent is an outhouse, with a window facing the south, three feet six inches by four feet. It is about eight feet by ten feet, and seven feet high, with a fire-place in it, and a flower-stand close to the window.

TREE PÆONY (M. C. E.).—The plan you propose, of cutting down a straggling Tree Pæony is hardly ever adopted, but there is no question about its being the best plan in the long run. We often see these plants, under ten years of age, straggling on the tops of hide-bound stag-horn sticks, that would not be allowed one day in any other plant in the garden. As far as the proper culture of these Mountain Pæonies go, we Britishers are just as indifferent to common sense as the Chinese gardener is in using his chopsticks in preference to knives, forks, and spoons. Cut them down by all means, and let the bottom throw up strong shoots instead, as they are now offering to do; but recollect, this cutting, or any kind of pruning to Mountain Pæonies, *must be done in March*, and at no other time. A starved Gooseberry bush should be pruned at the end of September; a starved Apple, Plum, and Cherry, at the same season, but these are not *early risers* like Mountain Pæonies, which move by the first sun of the new year, and move the sooner the earlier they are pruned; and so sure as they move before the proper time in the spring, so sure are they to be nipped by the late frosts; therefore, it is best to delay pruning them until they begin to move in the spring.

PARALYSED DUCKS (A Constant Subscriber, Exeter).—Ducks hatched in June and July are constantly liable to the spasmodic attacks you complain of, and the greater the degree of heat, the more numerous the cases. In Cornwall this malady is commonly spoken of as the *sprawls*, a name sufficiently indicative of the symptoms. Recovery rarely happens, and the exact nature of the attack is not clear, but since ducklings hatched before and after this period suffer comparatively little from these seizures, it would be fair to presume that the heat of that period of the year is the main cause.—W

BEAK OF THE AYLESBURY DUCK (Ibid).—We have seen some of the best Aylesbury ducks injured in the colour of their bills by being placed in situations where they had access to water flowing from peat and moss. In other cases the failing is hereditary. Young birds are less subject to these stained bills than the older ones, and the blemish does not manifest itself, in some instances, till the second year. The parent of your's might be thus faulty; but occasionally, in the best breeds, this failing shows itself with age. The drake's bill is more difficult to obtain of the right colour than those of the ducks; its yellowish tinge, indeed, has often marred the appearance of otherwise good pens.—W.

QUINCE TREES (Amateur, Queen's County).—They rarely bear well except by the side of water, or where the soil is always cool and moist. It prefers a rather shaded situation to an open sunny exposure. We will recur to the subject.

EARLY VINERY (T.).—Have a ridge-and-furrow roof by all means. The roof may be fixed, as you propose to have ample ventilation at the back and front. We should have it at the ends also.

RAISING VARIETIES (Caroline).—As you wish only for hardy flowers, none will be so easy for you to practice upon as the Pansey. You may move your large *Lilacs* as soon as their leaves begin to change colour in the autumn.

FRUIT SYNONYMES (R. S.).—We have heard of the *Lady Lennox* apple, which is thus described in Hogg's *British Pomology*:—"Large and handsome; lemon-coloured, pale red next the sun, and striped with deeper red. An excellent culinary apple, in use from November to April. Raised from the *Rymer*, and is a favourite about Nottingham." We will enquire about the *Lord Lennox*. Your *King of the Pippins* is also called *Hampshire Yellow*, *Hampshire Yellow Pippin*, and *Jones's Southampton Pippin*. Your *Vicar of Wakefield Pear* is also called

Monsieur le Cure and *Dumas*. You may obtain the *Lamb Abbey* and the *Claygate Pearmain* of any nurseryman near London. Use your own *Asparagus seed*; some will certainly ripen. The strength of your seedlings will depend upon the liberal culture you bestow upon them.

TAR-BARREL SYSTEM OF PLANTING (Rouge).—The reference made to this at page 422 alludes to a mode of planting climbers beneath trees. The roots of the trees soon destroy the climbers by robbing them of the nutriment in the soil. To prevent this, the climbers are planted in tar or other barrels, which exclude the roots of the trees. Any light rich garden soil suits the *Stauntonia*. If planted in a barrel, the fertility of the soil must be maintained by top-dressings and mulchings.

FANCY GERANIUMS (J. R.).—You may make cuttings now. They must be preserved through the winter in a cool greenhouse, or room, from which frost is excluded. For an excellent list, just refer to page 283. *Pompone Chrysanthemums* will bloom in October and November. On no account stop them if you wish them to bloom. *Ducks* would not thrive in your small yard.

DISEASED POULTRY.—G. M. H. says—"I have suddenly lost two hens, and have now two more affected with the same disease, which appears to be infectious, as a duck has now got it. It appears to seize them in the back and legs, as they cannot stand, and their backs become rounded, and the tail droops. One or two hens have all had great giddiness and staggering, with loss of appetite." We think that these symptoms intimate excess of feeding. Try a lower diet; give them only soft food, such as boiled potatoes and a little barley-m meal, and keep in a cool place.

BEER HOUSES (A. C.).—The evil is in their abuse; and surely it is not wrong to raise a warning voice against this?

SEEDLING PANSEY (J. C.).—It is curiously splashed with blue and white, something like *Harlequin*, and the form is good; the petals, however, are thin, and it would not do for a show flower.

ROSE-CULTURE (Rhodophilos).—There is no good separate treatise on this subject. There is a translation from the French full of inaccuracies. Have you seen the directions given in *The Cottage Gardeners' Dictionary*?

MORTALITY AMONG CHICKENS (N. G. Morris).—You must have mismanaged them in some way; but as we neither know the variety, nor the food, nor the treatment, we cannot say where the error lies.

GRUBS ON PEAR-TREE LEAVES (An Old Subscriber).—The curious insects you enclosed are not uncommon. The upper surface of pear-tree leaves during the months of July, August, and September, are liable to be destroyed by what is very characteristically named the *slimy grub*. Of these yours are specimens. These grubs are nearly half-an-inch long, cylindrical, but thicker towards the head than at the other extremity. The whole body, except at the time of skin-casting, is covered with a sticky, greenish-black matter, and from this they have been named. Whilst feeding, the fore part of the body is so swollen that the vermin looks somewhat like a small tadpole. If the slimy matter is removed from the body, this is found to be a grub or caterpillar with twenty feet, and of a pitchy brown colour. At the last-but-one casting of its skin, the sliminess no longer appears, and the grubs become of a clayey colour. They finally form a brown cocoon about October, and remain in the pupa state until the following June or July, when the perfect insect comes forth as the *Selandria Ethiops*. Linnaeus called it the Cherry Saw-fly (*Tenthredo cerasi*), from the mistaken opinion that it attacked the leaves of that tree only, whereas its grubs are more frequently found on the leaves of the pear. This fly is shining black, and the tips of the legs yellowish. The female lays her eggs on the upper surface of the leaves. The slime on the grub is of a peculiar nature, not being dried by exposure to the hottest sunsline. The best mode of destroying it, is by dusting it with quick-lime whilst the grub is in a slimy state. A drawing of the Saw-fly is in our 58th number.

WILLIAM ADAMS (C.).—Stamps received.

CALCEOLARIA SEEDLINGS (M. H.).—All dried up. Flowers in such hot weather should be in a tin box, and laid upon damp moss.

NAME OF TREE (L. M. J.).—We think *Pyrus edulis*. You may graft the Pear upon it.

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WEEKLY CALENDAR.

M D	W D	AUGUST 25—31, 1853.	WEATHER NEAR LONDON IN 1852.					Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.							
25	Th	Chi Moth; old walls.	29.915—29.882	73—56	S.W.	—	3 a. 5	1 a. 7	9 47	20	1 52	237	
26	F	PRINCE ALBERT B. 1819.	30.045—29.973	74—54	E.	—	5	VI	10 10	(☾)	1 35	238	
27	S	Barred Sallow; woods.	30.117—30.107	75—54	E.	—	6	57	10 39	22	1 18	239	
28	SUN	14 SUNDAY AFTER TRINITY.	30.040—29.993	76—57	S.W.	—	8	54	11 16	23	1 1	240	
29	M	Gold Spot; meadows.	30.024—29.969	76—47	S.E.	—	9	52	morn.	24	0 53	241	
30	Tu	Blue-bordered Carpet; woods.	30.019—30.010	72—45	S.W.	—	11	50	0 5	25	0 26	242	
31	W	Snout Moth; hedges.	30.077—30.007	69—44	S.W.	—	13	48	1 5	26	0 7	243	

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 71.7° and 50° respectively. The greatest

heat, 83°, occurred on the 25th in 1826; and the lowest cold, 36°, on the 26th in 1850. During the period 115 days were fine, and on 67 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 374.)

NASTURTIUM. CRESS.

GENERIC CHARACTER.—*Calyx* equal at the base; leaves long-egg-shape, blunt, spreading, somewhat coloured, deciduous. *Petals* reversed egg-shaped, spreading, undivided, tapering into short claws; occasionally wanting. *Stamens* with awl-shaped, simple filaments; the two shortest each with a gland at the base withinside. *Antthers* incumbent, somewhat heart-shaped. *Germen* cylindrical. *Style* erect, short, cylindrical. *Stigma* blunt, notched. *Pod* nearly cylindrical, rather swollen, shortish; valves concave, without ribs or keel. *Seeds* roundish, flattened, without a border, irregularly disposed, on slender stalks; cotyledons accumbent.

NASTURTIUM OFFICINALE: Water Cress; Water Kars.

Description.—It is a perennial. *Roots* of many crowded, long, simple, white fibres. *Stems* spreading, for the most part floating, leafy, branched, round with several angles, mostly smooth, but occasionally, when out of the water, a little downy or hairy; they vary considerably in length. *Leaves* smooth, deep, shining green, pinnate, or somewhat lyre-shaped, the terminal leaflet being largest; all wavy rather than toothed. *Stipulas* none. *Flowers* in a bunch at the end of the stem. *Petals* white, or slightly purple, with a purplish *calyx*. *Pods* barely an inch long, tumid and undulated at the sides, smooth, curved upwards, each on a horizontal stalk, variable in length. The variations in the size, number, and colour of the leaflets are not deserving of any attention.

Places where found.—Very common in streams and ponds.

Time of flowering.—June and July.

History.—It is a native of every quarter of the globe, and is as universally esteemed as an agreeable, wholesome vegetable food. It is believed to be the *Cardamon* of the Greeks, and if so, their estimate of its merits is told by their Proverb—"Eat Cresses, and attain more wit." Amongst our countrymen, all seem to agree with the old herbalist, Gerarde, that "it sendeth into the face of young maidens their accustomed lively colour;" and with the philosopher, Lord Bacon, that "it is an herb friendly to life." It is universally allowed to be anti-scorbutic, and its juice mixed with that of Scurvy Grass, and of Seville Oranges, formed a once very popular medicine called "The Spring Juices."

It is now chiefly employed as a salad herb, and in this way vast quantities of it are annually consumed. Formerly the London market was entirely dependant upon the natural production of this herb from streams in its vicinity, but since the commencement of the present century, many acres have been devoted to its cultivation; a shallow stream being made artificially to sustain their growth. In Paris the consumption is far greater than in London, in proportion to the number of its inhabitants. The following is the recipe for the celebrated *Poulet au cressons*, or Chicken with Cresses, of the Parisians. Cover the chicken with slices of bacon, and envelope the whole with paper; while roasting baste it with its gravy. When sufficiently roasted, serve it up in a dish with the gravy, and thickly surrounded with

Water Cresses, previously seasoned with salt and vinegar. (Smith. Withering. Martyn.)



NASTURTIUM SYLVESTRE: Creeping Yellow Cress; Water Rocket; Creeping Water Rocket.

Description.—It is a perennial. *Root* creeping extensively. *Stems* erect, though wavy or zigzag, a foot or more in height, leafy, angular, and furrowed, roughish with minute points. *Leaves* leafleted; the upper ones pinnatifid; the lower stalked; leaflets or segments of all elliptic-spear-headed, or oblong, smooth, unequally toothed, or variously jagged, often decurrent. *Clusters* terminal, paniced, much lengthened out after flowering, and becoming zigzag. *Flowers* numerous, small. *Petals* of a golden yellow, the *calyx* partaking of the same colour. *Nectary* glands four, in a circle. *Pods* very sparingly perfected.

Places where found.—Margins of rivers and ditches, and in gravelly wet meadows; not common.

Time of flowering.—June to September.

History.—This ought to be held in reverence of every schoolboy, for "Pliny reporteth, says Gerarde, that who-soever taketh the seed of Rocket before he be whipt shall be so hardened that he shall easily endure the pain." We fear that Pliny's species must be numbered among the lost vegetables! It should not be without a share of ladies esteem, for the same old herbalist assures us that "The root and seed stamped and mixed with vinegar and the gall of an ox, take away freckles." Dodoens and others recommended it to be mixed with Lettuce as a salad herb. (Smith. Withering. Martyn. Gerarde.)

SOME eighteen centuries ago, Pliny wrote as his conviction that the remedies for our diseases should be derived from the plants which are growing around us. This, says the Roman naturalist, is the origin of medicine, and nature ordained that remedies should be prepared only from those things upon which we live, and which are common, easily found, and without price.* We confess ourselves to be disciples of Pliny. We plead guilty—if guilt be upon the opinion—to a conviction, that they are not mere meaningless words and acts when we are told that the Tree of Life was in the midst of the garden, and when Moses healed the waters of Mara by throwing into them the branch of a plant. In short, as we think that in ancient days they employed no other remedies than were derived from vegetables, and that “balm in Gilead” was the type of all pharmaceutical preparations, so we think now, that in Medical Botany we ought to seek chiefly for our remedies.

No one is more conscious than we are ourselves of the debt we owe to the alchemists. We readily acknowledge that among their crucibles was the birth-place of chemistry; but we regret, that in their search for the elixir of life they brought into repute mineral medicines so much to the exclusion of those derivable from plants. Within the present century we hoped that a contrary course had been permanently adopted; and we rejoiced to read of every fresh addition to the vegetable portion of the Pharmacopœia, from the day when Withering ventured to administer the Foxglove, down to that when Berra dared to give doses of the deadly Nightshade.

We hoped, and still hope, that year after year fresh discoveries may be made in the same fair field; and we would have our readers feel, as we feel, that this hope has a cloud of evidence from the past to sustain it. Debar the modern medical practitioner from the use of Opium, Digitalis, Rhubarb, Ipecacuanha, Veratrine, Elaterium, Hyoseyamus, Quinine, and a hundred others we could name, and you deprive him of the chief of his most active medicaments. Now, those are all of vegetable origin, and almost all the results of researches within the last century. Is this a time, then, fitting for relaxing in our efforts to promote such researches? Not a reader but will respond in the negative. Is it not rather a time to increase those efforts, and to incur further expenses, and to strengthen present institutions intended for such researches? Not a reader but will agree with us that it is.

Feeling all this, we read, with no small astonishment and regret, that the Apothecaries' Company have resolved to render their *Chelsea Botanic Garden* more inefficient than it is even at present. Why is this? Does the Company consider that it achieves too much good? Does it think that it already is too promotive of the pharmacy of England? Does it labour under the impression that it too much excels foreign kindred institutions? If such opiate delusions are in operation

at Apothecaries' Hall, we advise them to arouse betimes to a sense of the truth that the opinion is fast gaining ground that the Company performs a too-inefficient part in the medical education of the present day.

It may be true that the Chelsea Garden costs annually some hundreds of pounds. It may be that it effects little good in comparison with the outlay; but these are not reasons for its abolition, or for its depreciation. They are only reasons for a more liberal outlay, and for better directed efforts. There can be no plea of a want of funds, for, to name but one source of income which might be more legitimately employed, why is not the profit derived from the sale of drugs at Apothecaries' Hall devoted to the support of the Physic Garden, instead of being transferred, as it is, into the pockets of certain old medical practitioners, who ought to blush when they acknowledge the receipt of money so misappropriated?

Let it not be supposed that such an institution as a garden devoted to medical botany is useless; for, if this be abolished, whither can the medical student proceed to obtain an inspection of the plants useful in his profession? Indeed, so far are such gardens from being useless, *if properly organised and liberally sustained*, that not a medical school of eminence on the continent but has such a garden, to which its pupils are called upon to resort.

We are quite aware that the Chelsea Garden is not to be abolished, and that, probably, for the best of reasons—the Company would forfeit all title to the property if they were to attempt such a perversion. The garden is not to be abolished, it is only to be curtailed and reduced in its efficiency—in its greenhouse and hardy plants we know not how much; but we learn from its present able curator that “The Apothecaries' Society have authorised him to preserve a selection of the more important tropical medicinal plants.” A selection!—why not all?—why not an increase?—why not a greater outlay to establish a museum of medical plants and their products, a more worthy library, and more efficient lectures?

We have said that the Company would forfeit the possession of the garden were they to attempt to pervert it from its legitimate purpose; and we so say, because, when Sir Hans Sloane conveyed the garden to the Company, he had the conveyance preambled and covenanted as follows:—“That to the end the said garden may, at all times hereafter, be continued as a Physic Garden, and for the better encouraging and enabling the said Society to support the charge thereof, for the manifestation of the power, wisdom, and glory of God in the works of the creation, and that their apprentices, and others, may better distinguish good and useful plants from those that bear resemblance to them, and yet are hurtful, and other the like good purposes; the said Sir Hans Sloane grants,” &c., to the Society the said garden, “provided, that if these conditions be not fulfilled, or if the Society shall, at any time, convert the garden into habitations, or to any other uses, save such as are necessary for a Physic Garden, for the culture,

* It is a curious coincidence, that the prophet, when describing his vision of the holy waters, relates that of the trees growing by their side, that “the fruit thereof shall be for meat, and the leaf thereof for medicine.”—*Ezek. xlvii. 12.*

planting and preserving of trees, plants, and flowers, and such-like purposes," then the garden shall revert to Sir Hans Sloane, his heirs and assigns, for the use of the Royal Society, &c.

For the reasons we have assigned, and for many others, we hope that instead of decreasing the efficiency of the Chelsea Garden, that the Apothecaries' Company, inspired for once with the spirit of the age, will strive to render the Physic Garden more useful. To pursue a deteriorating course will be a dereliction of duty, and strangely contrasting with the spirit of their predecessors, who, at the expense of some £300 erected a statue in honour of its donor, Sir Hans Sloane. We are quite sure that the garden might be rendered of very great utility, and the value in which it is held by the profession for whose benefit it is especially intended is shewn by this published record, sanctioned by the Company:—"It is a most gratifying feature in the memoirs of this garden, that the members of the Society have stepped forward with the utmost alacrity in every period of that history where pecuniary exertions were necessary for the support of this valuable establishment."

VARIOUS applications have been made to us, having for their object enhancing the value of the so-called Brahma Poutra fowls. Some of these applications contain statements of their having recently been sold for enormous prices; others contain statements of the alleged mania for them in America; and a third set of communications endeavour to convince us that they are a distinct breed.

We cannot be influenced by any of these communications, for they may be all, and, to a certain extent, some we know to be, incorrect. Brahma Poutras we believe to be neither more nor less than Grey Shanghaes; and we do not yet swerve from this very first opinion we expressed of them, and that they have a tinge of Malay blood. This opinion is confirmed by the following letter from a party whose name is communicated to us; and we again warn our readers not to be deceived into giving high prices, unless they prefer Grey Shanghaes to Shanghaes of any other colour:—

"I am pleased to find that you are still incredulous enough to disbelieve all that is said about the rarity and increased advantage of the new breed that has lately been brought into notice and trumpeted up by the name of Brahma Poutra fowls, but which are, in reality, nothing but the Grey Shanghaes, and a very coarse variety of the ugliest of them. They are no better layers, are not larger, and do not possess one single advantage in any other respect, though very deficient in many of the beauties we are now accustomed to look for in Buffs and other colours. It appears there is some intention of bringing these ugly birds into notice, with the view of making a high price of them—a purpose you will, I am sure, not lend yourself to serve.

"Having had very considerable experience with all poultry matters for the last few years, I beg to inform

you that I have known these Grey Shanghaes for years, and I will tell you how they first sprung into notice.

"A poor gardener, named William Turner, who lived in a small house in the Tuffnel Park Road, Holloway, near London, received a grey cock from Mr. Griggs, of Tollington Park, in payment for his services. This bird was called a Grey Shanghae by all who saw it, and I believe 7s. 6d. or 10s. was allowed for him. Turner, in addition, got two of Mr. Stainton's pullets—the then (1850) sweepings of his yard, but they were two buffs, and from these and the grey cock he bred the next season. He sold three of the chickens to Mrs. Hosier Williams, for 10s. each; and these were all greys, although the chickens were almost in equal quantities of grey, buff, red, &c. No one valued them one jot, until, in December, 1851, Mrs. Hosier Williams received an extra prize for them at Birmingham, and sold them for a large price, when she presented Turner with £1, on informing him of the news. These birds were identical with the Brahma Poutras of this time, and I have seen very many of them since bred by Mr. Stainton, of the Hornsey-road, from birds derived from the same source as Mr. Griggs—the cock he gave to Turner—but they were interbred with the buffs; and neither Stainton, Griggs, nor Turner, ever entertained any other idea but they were the same breed, although they discarded them as they appeared, on account of their bad and unsaleable colour.

"The Brahma Poutras sent by Dr. Bennett were precisely the same as those above alluded to, and which he exhibited at our Show last December, and where also was exhibited, in the extra Class 2, splendid grey cocks, bred by Mr. Stainton. The birds sold to Mrs. Hosier Williams, by Dr. Bennett, were not exhibited there at all (as Mr. Gilbert says), as they were then out of her possession, having been sold to Mr. Bowman; but Mr. Stainton's were there; and the only difference between his and Dr. Bennett's was, that Mr. Stainton's were the largest. I know this subject well, and can vouch for every syllable I have stated.

"Although poor Turner was successful in selling his greys to Mrs. H. Williams, yet nobody else would then look at them; and many were sold in Mr. Steven's Auction-room, last autumn, for a mere trifle. There were six or seven lots of handsome grey cockerels put up successively while I stood by, and there was not one bidder, and that was not one year since.

"These grey birds are not rare, by any means, about London, as Mr. Stainton has given away some at various times, and which I have since seen; and, no doubt, if Turner has not eaten his, he has yet some in his new abode in the country; but, judging from Mr. Gilbert's birds, which I have seen, nothing can be more ugly nor common-looking. The two hens appear to have a Malay cross in them, as they are hawk-headed, and one has a tendency to a double comb. One hen has, also, nearly a green leg. They both are nearly clean-legged, and the cock by no means handsome."

Two Societies have lately added their prize-lists to those already published for the Poultry Exhibitions of 1853.

"The Dorsetshire Association for the improvement of Domestic Poultry," will hold its second Annual Meeting in Dorchester, on the 19th and 20th of October next; and the list of patrons and patronesses would sufficiently indicate the activity of those to whom the management of this Society has been entrusted. But beyond the mere formal announcement of such patronage, a most unusual circumstance appears in the fact, that no less than eight pieces of plate are offered, as extra prizes, for different breeds of fowls, by noblemen and gentlemen resident in the county. The prize-list is well-arranged, and liberal premiums are offered; the regulations, moreover, are excellent, being short, yet explicit and intelligible. Under such favourable circumstances, a brilliant meeting may, doubtless, be anticipated; and heartily do we congratulate Mr. Andrews, the Honorary Secretary, on his well-merited success.

The second list to which we alluded is that of the "Cornwall Society," which we notice has greatly extended its classes for Geese and Turkeys, in both of which the old birds and those hatched in 1853 will contend separately. We certainly regard this as an improvement, especially as it may bring into the field more of those farmers and cottagers whose benefit is one of the main objects of such institutions. The number of distinct Poland varieties that have been recently introduced have caused the addition of a fourth Poland class. Such birds were previously forced to compete at comparative disadvantage among "those of any other distinct breed." The exhibitor and the public will, therefore, both gain by this alteration.

The 27th and 28th of December next are appointed for this meeting, which will be held in the Corn Market, Penzance.

SEVERAL more letters from Exhibitors at the late Baker Street Poultry Exhibition have reached us, complaining of the delay in receiving back their birds, and, in one instance (Silver-pencilled Hamburgs) they have not been received at all. The letters complain, also, that the writers can obtain no reply. This, we think, arises from Mr. Catling's absence, for we know that at the time the letters were written he was acting as Judge at the Great Yarmouth Show. Nevertheless, we must again call his attention, and the attention of all persons connected with similar exhibitions, to the imperative necessity of having better regulations for the earliest possible and secure restoration of the birds to their owners. Because, as one correspondent justly remarks—"if such carelessness and inattention were general, there would soon be an end of Poultry Exhibitions." Committees of such Exhibitions, if honourable men, consider that their most important duties commence when the show finally closes; for then comes the payment of the prizes, and the restoration of the birds. The man who becomes careless so soon as his object—a successful exhibition—has been obtained, is totally

unfitted for any office connected with such an exhibition, and is guilty of an offence morally not less an offence than would be a malicious injury to the fowls.

We are very glad to find that our recent observations upon this point has been taken in good part, and acted upon, by the Committee of the *Malvern Poultry Exhibition*. The Honorary Secretary, Mr. T. Davis, says:—

"I have just read Dr. Gwynne's letter. I am a fellow-sufferer from the same Exhibition. I have also read your notes, and have, fortunately, made all the arrangements suggested by you, viz.: own carriages to and from the station, &c.; and although we do not expect more than 300 pens, I have three committee-men, and nine assistants. Every bird sent to our Show will leave in eight hours after the Show closes, on Thursday night.

"We have also Farmers' Classes for this county; and £12 to be given to the Cottagers of this locality."

All this is as it should be, and we have reason to believe the Exhibition will be a good one. The Bristol and Birmingham Railway will only charge for taking the birds to the Show—bringing them back gratuitously.

WHAT SHALL WE DO FOR OUR TENDER FRUIT-TREES IN SEPTEMBER?

For my own part, I consider this month as exercising a most potent influence on the prospects of the following year. The farmer knows that plenty of sunshine is requisite to his wheat crop during the month of August especially; and the gardener may know, that what a sunny August is to wheat, a sunny September is to fruit-trees in general. If, then, sunshine be really so essential to the embryo buds of fruits—to say nothing of the ripening process in late fruits—who can justify the retention of superfluous spray, the result of neglect in early summer? Besides, if this be true in ordinary seasons, how much more weight must it carry after such a summer as we have passed, during which a double amount of sap has been called into play, as regards trained fruit-trees?

Talk of blind blossoms, indeed, and about severe springs, and bad localities! any locality may be bad, if principles are ill understood, or practices absolutely essential are suffered to fall through for want of labour. There is an old saying, that "a bad shearer never gets a good hook;" and this will apply occasionally to the cultivators of fruit-trees.

The analogy between the buds of plants, or trees, and seeds, appears so strong, that any person who can comprehend what conditions are necessary to perfect seeds is in a proper position to understand the needs of the ripening bud, more especially if both seed and bud be the offspring of plants or trees from warmer climes.

Look, for instance, at our Lettuces, Cauliflowers, and such garden esculents, originally from warmer climates than Britain—what is the known consequence arising from badly organised or ripened seeds in untoward seasons? Why, not only a bad crop, but a badly constituted plant. Hence, shanking, fogging-off, monstrosities, and imperfect developments in the seed-bud. People look astonished, and say, "It is very odd that these plants do not get on, and I used to have such good luck with them;" but such anomalies are rarely placed to the right cause, and the thing being, in the main, apparently shrouded in mystery, misconceptions are continued from generation to generation.

THE COTTAGE GARDENER, they say, has done much to

remove these ambiguities, and the veil which covered the fair face of horticulture; and I believe it. The time draws near, I am persuaded, when the great principles—which, though few and simple, are grand and abiding as to their influence on gardening affairs—will be as patent as the air we breathe; and processes hitherto considered necessarily doubtful be reduced to almost mathematical precision.

So much for an exordium to a very simple tale; which, after all, lies, as they say, in a nutshell. Let me repeat now my text, "What shall we do for our tender fruit-trees in September?" The wood must be ripened, and that, too, through the influence of solar light and warmth; shade, therefore, of any and every kind is averse to this process. There are, of course, several kinds of shade, such as the shade of trees overhead; the shade of adjacent standard fruit-trees; the shade of walls, buildings, projections, &c.; and last, the shade of the tree itself, a sort of suicidal affair. It will be seen, that in the latter case, I mean principally the shade created by neglect of timely dressing in our trained fruit trees.

It will be well, I think, for those of our readers, who are not fully imbued with the importance of this subject, to go over some of our fruits; pointing to their probable or possible position after one of the wettest and cloudiest summers on record; strong and healthy fruit-trees, not oppressed of late with much bearing; young trees which have not commenced; and many of those planted in soils rich in humus or manurial matters, will, in consequence of the vast amount of both ground and air-moisture, during part of June and July, have shown a constant disposition to produce a profusion of laterals, as well as great extension in the leading shoots. Laterals, as before observed, produce shade, and the latter ever has a tendency to produce barrenness. The season has been somewhat unusual, and will justify our resorting to extra means in order to promote fertility.

THE APRICOT.—Here we have a subject which differs somewhat in habit from most of our fruit-trees: to which shall we compare it? Perhaps the Plum; indeed, if there were not some kind of affinity, our nurserymen would not "work" the Apricot on the Plum stock. Apricots possess a singularity of habit in this respect; they grow rather impulsively. A healthy Moor-park, during the end of July and the early part of August, will produce two or three generations of laterals, stop or pinch how you may. But no sooner does the out-of-doors thermometer descend somewhat below 60°, on the average, than our hitherto fast friend becomes paralysed, for Apricots cannot endure a low temperature whilst in a growing state. Every breast-shoot which is not wanted should be pruned to within about three eyes by the third week in August, at latest; for every ray of sunlight after that period is needed to complete and ripen the newly-formed buds on the fruit-spur on the young shoots. If any gross leading shoots are still making way, off with their heads in true Chinese style—let there be no hesitation. All growths made after this period only serve to increase pruning in winter; to waste the true energies of the trees; and to interfere with that high course of concentration and elaboration, so essential to tender fruits, and so conducive to a healthily-developed blossom in the ensuing spring.

PEARS.—Little need be said as to Pear treatment in addition to the Apricot. One thing I would especially refer to, as a particular feature in Pears, and it is this: we frequently find trained branches, some ten or twelve feet from the bole, totally bare of extending shoots, and at the same time no lack of breast-shoots in their lower portion. Now, as I have to advise that a general stopping be practised immediately, I at the same time claim an exception for any growing shoots towards the

extremities of such branches. The fact is, that such branches have generally been too much emptied of the *true sap* towards their extremities by former crops to leave sufficient energies for the production of a liberal amount of new wood. The sap-vessels thereby become constricted, and hence Nature speedily forms other and more reciprocal channels lower down. This is merely a topical affair, and simply requires that every rambling shoot be left growing to the end of the season; and thus, after the breast-wood is all stopped in other portions, any growing action remaining in such parts will appropriate much of the proceeds of the remaining root-action; the vessels will again expand, and both fruit and buds will receive their proper amount of sap. This, at least, is my view of the matter, based on much experience, and annually confirmed by continual observation. But, it may be remembered, that this view of the sap-action in trees is not confined to the Pear alone; neither to fruits: the whole vegetable kingdom, with few exceptions, is liable to be thus affected.

I do, therefore, think that it is of immense benefit to trained Pears to stop *every growing point*, with the exception of those at the extreme end of each branch, by the middle of August; and not only this, but to remove as much of all lateral wood as casts a shadow on the embryo or would-be bloom-spurs. I had verily intended to go over each of our hardy fruits, but, as I proceed, I feel that there is little occasion; such would, of necessity be, in the main, repetition. With a little modification, based on the individual characteristics of the kind, the same principles will apply to all, at least, all from milder climates.

And now, as the summer has been of a special character, our advice must be special too; and here I must give a turn to our chat, and advert to *root-pruning*. Some people may think that it is a strange time of year to refer to this, commonly a winter procedure; but I have met with cases in which it has proved of much benefit in the month of August or September. I certainly am not disposed to advocate root-pruning to subjects already oppressed with fruit-bearing: such need it not; indeed, it would prove ruinous. But, where trees are troubled with an almost invincible coarseness or exuberance of spray and foliage, in consequence of much ground moisture and humidity of air during the chief summer months, then, I say, root-prune betimes, especially if the early autumn present untoward symptoms, and cloudy weather prevail. I have, years since, root-pruned, in September, subjects of gross habits, until the very foliage of the tree flagged, and have noticed good results from the practice; some moderation, however, must be observed.

Those who are disposed to follow this advice, may excavate a trench at a good distance from the tree, so as simply to cut the very extremities of the roots; this will give an instant check, in a moderated way, to the growth, and cause, through an early cessation of the active principle, a somewhat early rest, and a consequent solidifying of the wood—the chief point aimed at. If the subject be very gross indeed, they may steal a further march on the roots in the first week of November, by digging and cutting a foot or more nearer to the stem of the tree; this will tame, for a year or two, the most unruly fruit tree, and speedily induce a fruitful habit. In fine, as the summer has had a decided tendency to produce a coarse habit in young or unfruitful trees, a watchful eye should be had over them, for a timely procedure, as here suggested, will assuredly be more profitable and convenient than the let-alone-plan. Even if all our fruit-trees were planted by men who really thoroughly understood them, yet still would some disappointments ensue. If the preparations were made to suit hot summers, wet ones would set at naught the skill exercised, and *vice versa*. And even if a middle

course were steered, that happy medium so well known to everybody, and practiced by few, I much fear that faults would occasionally occur. R. ERRINGTON.

BULBS.

(Continued from page 362.)

As the time is fast drawing on for potting *Cape bulbs*, I shall break through the rules of the alphabetical order, and group together a few other genera, as well as those which we most generally mean when we speak about Cape bulbs, because all these require much about the same kind of treatment throughout. Last week, I slipped over *Hypoxis* in order to get *Ismene* in with *Hymenocallis*, and other sections requiring similar treatment. By following the order of the alphabet we seldom miss any plants that are worth having; but that is not at all the best way to treat of large sections of plants like that composed of bulbs. Besides, Cape bulbs are more recognised, as a whole, in our gardens and catalogues than any other set of bulbs in this series, and those belonging to the *Ixia* tribe, or *Irids*, more particularly. Of *Irids* in general, we shall therefore treat in a group.

HYPOXIS.

This is a genus of plants that are neither bulbs, nor *Irids*, nor altogether from the Cape, but, as the leaves and the flowers look as if they ought to be borne by a set of bulbous plants, the little difference in their culture from that of *Irids* need not separate them from our group. The handsomest kinds of *Hypoxis* are from the Cape of Good Hope, where, as far as I could ever learn, they are by no means very common, or in large numbers where they are met with. In a list, now before me, of a general consignment of all the kinds of bulbs that could be met with in our Cape territories during a residence of three years, and not many years since, there are only two species of *Hypoxis*, one of which only came to hand, and only three roots, or, rather, tubers of it, while as many as fifty bulbs were sent of some other kinds. The youngest gardener in the country knows an *Ixia* as soon as he sees one in flower; the oldest gardener, however, knows but a very few of the *Hypoxids*, in or out of flower; while a common observer could see no difference between the two flowers; only, perhaps, that the *Hypoxids* are more generally like stars than the *Ixias*. Each sort has six divisions in the flower,—three sepals and three petals, as they are called. When these divisions spread out wide in the full sun, if they are sharp-pointed, as in most of the *Hypoxids* they are, they look much in the form of a star, and like each other, yet they belong to two very different natural orders. *Hypoxis*, *Forbesia*, and *Curculigo*, form an order by themselves, called *Hypoxids*, coming very near to *Amaryllids*, and, like *Amaryllis*, they have six stamens in the flower, while all *Irids* have only three stamens. Then, if you flower a Cape bulb, or what they send home as such, with starry flowers, either white, orange, or yellow, with a black eye, and it has six stamens, and the looks of an *Ixia*, you may rest assured that it is some kind of *Hypoxis*. Sandy peat, with a little loam with it, suits them all. The different kinds flower from April to September,—some early, some late, and some between; and if they are grown in pots with *Ixias* or *Gladioli*, they may all be potted in the autumn, for the sake of convenience and keeping the stock together, but, otherwise, the end of February is time enough to pot them; they do better, however, out in front of a house or wall.

HYPOXIS STELLATA.—This and the next are the two best and gayest of the family. *Stellata* is very showy,

as white as snow, with a dark spot at the bottom of each petal. It is a native of the Cape of Good Hope, flowering in April and May.

HYPOXIS ELEGANS has beautiful white flowers, like the preceding, with a dark eye. Its flowers appear early in May, and continue a long time. It is a native of the Cape.

HYPOXIS LINEARIS.—Another Cape species, and perhaps the next best, or, at least, the best of the light yellow ones. It is a brilliant orange colour, and the plant is all but hardy. I think these three could be bought in the bulb shops in London.

HYPOXIS SERRATA comes nearest to the preceding, but the flowers are smaller, and keep on in succession much longer.

HYPOXIS STELLIPILIS.—A Cape species, with small, golden-yellow flowers, which blow almost all the summer.

HYPOXIS ROOPERII.—A very strong kind from the Cape, with large, golden-yellow flowers. This is on a par with *linearis* in beauty, and is the newest of the genus, being made known since the genus was printed for our *Dictionary*. It was sent home by Captain Rooper, in 1848, and flowered first by the Rev. T. Rooper, of Wick Hill, near Brighton. There is a very good figure of it, with all its history and descriptions, in the *Garden Companion* for last year.

HYPOXIS ERECTA.—This is quite hardy, being a native of North America. It is not uncommon in peat borders, and large patches of it will look well, and keep a long time in flower. The flowers are yellow, and are produced in great abundance. The tubers of this plant are in repute among the North American natives for several cures.

HYPOXIS CAROLINEA and *JUNCEA* are two more North Americans, with yellow flowers, which appear in June and July.

HYPOXIS VILLOSA, *SOBOLIFERA*, and *OBLIQUA*—all yellow stars from the Cape, and agreeing in points of resemblance. *H. VERATRIFOLIA* is like them, with a harsh, hairy leaf; and *H. HYGROMETRICA* is from New Holland, and also with yellow flowers. There are many more of them running in the same yellow strain—*elegans* and *stellata*, with *linearis* and *Rooperii*, are the best. Every one who grows *Ixias* and *Oxalises* ought to possess these four.

IXIA.

There has been a sad carnage among the *Ixias* since I first remember them, but to this day most of the old gardeners hold by the names that were in use thirty years back. *Babianas*, *Sparaxis*, and *Tritonias* were all called *Ixias* in my younger days, but these divisions do not imply any difference in the cultivation of them, for they all do under the same general treatment. Yet, we must go with the tide, and learn these names, else we come short of our shares when we go to market for them. The insertion of the stamens is the only generic distinction between *Ixia* and *Tritonia*—those of *Ixia* being inserted at the base of the segments, while in *Tritonia* they rise from within the tube—a great and marked difference in the eyes of a botanist, and in his eyes only.

When they are grown in pots, nothing is so good for them as rough peat with a little sand, but in an open border, outside, very little peat is needed, if the soil is naturally light, and a little sand is put round the bulbs; the pots called 48's are the proper kinds for them; and of the largest bulbs, three may be planted in each pot, and five of the more ordinary bulbs—one in the middle of the pot, and the rest at equal distances at the sides. Any time in October will do to pot them; a cold frame is best for those in pots all the winter, and to be taken to the greenhouse, or other place, when they begin to throw up their flower stems. Some people pot them in autumn,

keep them in frames till February or March, then plant them out in the balls to flower in the south borders; and that is a safe way for gardeners, but a most dangerous plan for amateurs, who may not understand if they are fit to be turned out at a particular time, or how to manage them in bad weather afterwards; therefore, upon whatever plan such people begin with them, that same plan ought to be followed out that season. Half-an-inch of soil is enough to cover them in pots, but in a border they ought to be at least four inches deep in the ground. Then, if a couple of inches of tan, leaf mould, or sifted ashes, is put over the whole as a security from frost, the depth is as much as they will safely endure.

IXIA ANGONA.—This is less showy than most of the species, therefore is not much cultivated.

IXIA ARISTATA.—A very pretty little flower, of a pale pink colour, streaked with dark purple.

IXIA AULICA.—A very handsome and desirable sort, with large rose-coloured flowers, and a strong habit.

IXIA CAPILLARIS.—A botanical plant, with greyish streaked flowers, called also *morpheia*.

IXIA CAPITATA.—There are many sorts under this name, all of them from cross seedlings; they grow taller than the generality of the family except *flexuosa*, indeed, there are two distinct sections of *Ixia*, but I regret my inability to make a clear, useful synopsis of them. *Capitata* and *flexuosa*, with their allies, grow much like oats, having long wiry stalks to support the flowers, and all such ought to stand in the back row in a border. The true *capitata* has white flowers, in a cluster, on the top of the long stalk.

IXIA COLUMELLARIS.—A pretty variegated flower, with a distinct ring in the centre; a dwarf species.

IXIA CONICA.—A very pretty, tall sort, with bright orange flowers inside, and crimson on the outside. When this flower is in bud, or closed, in dull weather, it forms a little crimson cone—hence the name.

IXIA CRATEROIDES.—Another beauty, with light crimson flowers of the largest size for the genus.

IXIA CRISPA and *IXIA DURIA* and *ERECTA*, botanical flowers, allied to *scillaris*.

IXIA FLEXUOSA.—There are several varieties of this; they are all beautiful, and range from white to rose and purple, in dense racemes along the top of a long flexible stalk.

IXIA HYBRIDA.—One of the varieties of *flexuosa*, and a good one.

IXIA INCARNATA.—A very handsome species, with large pink flowers, sometimes strongly veined.

IXIA LINEARIS.—A slender botanical plant.

IXIA LILACINA.—This is a shop name for some of the varieties of *flexuosa*, which are very pretty.

IXIA MACULATA.—A very handsome sort; light grey colour, with green spots at the base of the segments, or divisions of the flower, not much unlike *viridiflora*.

IXIA OCHROLEUCA.—A beautiful creamy-white flower, with a dark eye on long spikes.

IXIA MONADELPHIA.—A very beautiful, early kind, with flowers that vary much in colour, from light blue to orange, but all of them marked with a ring in the centre; the stamens grow into a column, or *monadelphous*—hence the name.

IXIA ODORATA.—A fine, bright yellow, sweet-scented flower.

IXIA PATENS.—One of the very best of them, with large, bright crimson flowers; it comes in early, and lasts a long time.

IXIA SCILLARIS.—A small, pink, botanical flower.

IXIA VIRIDIFLORA.—This is the most beautiful flower in all the Irids, or, at least, the most unique; it belongs to the tall *flexuosa* section. I have seen it above twenty inches high; it is a rare shade of green all over. It is the only one of the genus I ever attempted to cross and failed; but, under good management, I think the whole

family ought to be as much improved as the *Sparaxis* have been in Jersey. *Glacina*, and other varieties of *flexuosa*, ought, certainly, to cross with *viridiflora*.

TRITONIA.

This name means weather-cock, in allusion to the versatile anthers, which swing about anyway; but the bottom of the stamens being fixed inside of the tube is the great characteristic of the *Tritonias*, which, in all other respects, are nothing else but *Ixias*; but, in the absence of facts brought out by crossing, I must leave them as I find them; they are too numerous, and too near each other, in every respect, for me to occupy space with a short description of each, therefore I shall only make a selection from them.

TRITONIA CROCATA.—This is the most common of all the *Ixia* tribe, because there is hardly such a thing as killing it, and it is nearly as hardy as a *Crocus*, and, like the *Crocus*, would make a nice dwarf edging to a border of Irids. If there was a good demand for it, they could grow it so as to be able to sell flowering roots at a farthing each, and still realise £200 on an acre of them, after paying a good rent. It is the old *Ixia crocata*, with large, orange-coloured flowers, and a transparent tube.

TRITONIA SQUALIDA.—The most inappropriate name in the whole Dictionary for so handsome a flower. It is large, deep-red in the centre, and whitish near the margin, also beautifully veined with pink, and having a sweet smell.

TRITONIA DEUSTA.—A handsome flower, of a deeper colour than *crocata*, with a "black rock," or protuberance, at the bottom of every other segment; it is, likewise, as hardy as *crocata*.

TRITONIA FENESTRATA.—A handsome kind, as hardy as *crocata*, with orange-red flowers, of a glossy cast all over, but more particularly over the *windows* (*fenestrata*), or thin transparent blotch on the segments, from which the name is taken.

TRITONIA FUCATA.—Another beautiful, long flower, scarlet and orange, but more shy to bloom than the others.

TRITONIA ROSEA.—A handsome, but rather delicate plant, with long, tubular, pink flowers, with broad limbs, veined with pink, and some yellow spots.

TRITONIA LINEATA.—A delicate-looking flower; straw colour, tinged with orange, and veined with dark lines. Such is the cream skimmed off a score or more of them.

SPARAXIS.

From a few wild roots, this section has been multiplied, by crossing, to such an extent, as that nobody knows where they begin or end. I once ordered twenty-four kinds of them from a shop, and I flowered twenty-one out of the lot, but I could not describe one-half of them. They were exceedingly beautiful, and not a bad flower in the whole, but I found most of them to be very impatient of water in pots, and I never tried any of these very dwarf things in an out border; but in Jersey, where they cross them, or let them cross themselves, they grow, and flower, and seed, out in the open garden, as freely as *Crocuses*; and I think the Dutch growers look them up, and send them over with the *Hyacinths*. The best way to begin them is to order six or a dozen of the *most distinct* sorts from your London nurseryman, and leave the choice to his better skill; but, first of all, ask what he will charge for them, as, if he sends very scarce ones, he can make you pay highly.

SPARAXIS BICOLOR, *TRICOLOR*, *VERSICOLOR*, and *GRANDIFLORA*, the foundations of the recent tribes, are to be had in every shop as cheap as old *Ixias*. They also are beautiful large flowers, on dwarf plants, rich purple, with streaks and shades of lighter hues. The whole of

this race, in pots, require full one-third white sand added to the best peat, and a thorough drainage. There are a dozen more species of them from the Cape; but, like the wild *Gladioli* from the same quarter, the new European seedlings have rendered them of no use as garden plants.

BABIANA.

This is another section of *Ixias* which seem to be extremely abundant at the Cape, as one sees whole handfuls of the small bulbs of the different species come home in the usual collections. The Cape is infested with rogues, like all other foreign stations, who will sell you any plant you name; but there are people there, also, who can furnish plants and names as true as any London nurseryman.

In the list which is mentioned above, there are ninety-five species of Cape bulbs and tubers, most of which I have flowered, and found as true as if the plants came from the best nursery in London. In that list, Mr. Pince's new *Hæmanthus* is called *corymbosa*—a Cape manufacture, certainly; and there are a few others equally absurd. There is, also, a *major* and *minor* *Babiana purpurea*, which we do not recognise here; but they are so in reality at the Cape, and very distinct too. *Babiana rubra*, and a *rubra* variety of this list, is our *Babiana Thunbergii*; and that is all the difference between the English and this Cape list out of all the plants named above.

BABIANA THUNBERGII.—A bright purplish-red flower, and

BABIANA RUBRO-CYANEA, with dull red, and pale blue flowers, are the two best, and most distinct of them. Then

BABIANA PURPUREA, a purple; **RINGENS**, purple also, and **VILLOSA**, another shade of purple, are the next best; and

BABIANA DISTICHA, a bad blue, the last that is fit for a selection of them.

When we know the vast improvement made in *gladiolus*, and the endless variation in the *Iris*, we need not doubt but all these little Cape bulbs may be improved by similar means, but never having operated on *Irids*, except in *Gladioli*, I feel no confidence to recommend what kinds ought to be brought together; and to go by hearsay, or by what I or anybody else may think, is no better than the blind leading the blind; so the whole *Ixia* family may be said to be still an open field for crossing, except what has been done in *Sparaxis*, about which I am not aware of any authentic report being on record, or anything at all to guide the young beginner in this race.

D. BEATON.

COMPARING NOTES—TINGIRTH GARDENS.

THERE are few of us blue-aproners who are not humbled and bettered by having a peep, at least, of one great flower and gardening show in London during the season. Next to that, is the opportunity, now and then, of seeing some of the prettiest and best kept gardens in the country.

Though at no inaccessible distance, it is more than a dozen of years since I saw the above beautiful little place, which then, as well as now, I visited in conjunction with Woburn Abbey. Anything like a description of the latter place would, as in the case of a Trentham, or a Chatsworth, demand more time than I could spare, and more space than the Editor might wish; and yet a few salient points, which struck my own mind in visiting Tingirth, might not be without interest to many of our readers, and especially those who may have enthusiasm enough to rival any moderate-sized place, and yet might shrink from competing in anything with a princely establishment.

When I last saw Tingirth, the gardens were presided over by Mr. Phillips, a man of strong, herculean build, but who, notwithstanding, has long since paid the debt of nature. Visions of him and the place have often risen before me since. It was, decidedly, the best kept garden I had then ever witnessed, and I have never forgotten Mr. Phillips offering me half-a-crown for every weed, an inch in height, I could find upon the premises, and then gracefully adding—"It was no honour to him, as his kind employers, the Misses Trevors, stinted him in nothing." Since Mr. Phillips' death, after some changes, Mr. Manning, the house-steward, who had long been a fellow-servant, and carried out Mr. Phillips' desires during a long and painful illness, was desired to take the management of both departments; and though, in these days of the division of labour, such an arrangement might not be often desirable, there are few who could find any fault with it on the present occasion.

COTTAGES.—By going a different road, and getting some half-mile or so out of my way, a good opportunity was given for seeing how much the village was improved, by the addition of clean, commodious cottages, in almost every case accompanied with gardens, well stocked with vegetables and flowers. It came out, accidentally, that in this department Miss Trevor was her own architect. It was evident that mere ornament never stood in the way of solid utility. I also saw some beautiful blocks of cottages belonging to his Grace the Duke of Bedford. Many of our landed proprietors have been the first to act out the principle, that "property has its duties as well as its rights," not so much by giving charitable donations to the labouring classes around them, as by suitable dwellings and good-sized gardens, thus inspiring them with the desire and attempt to secure for themselves, by their own efforts, comparative independence of character and feeling.

LODGE.—The one at which we entered was alike picturesque and simple. Imagine a common, parallelogram, square-walled cottage, with the gable ends some two or three feet higher than usual; at the end, next the road, a rustic bay window below and one also above, the latter with a hood of thatch, so neatly done:—the roof projects over the end, and is nicely thatched, but, instead of stopping at the side-walls, it descends in the same slope four or five feet beyond them, being supported there by rustic wood columns, and thus furnishing a dry veranda round the house.

STABLE-YARD.—Here was rather an uncommon feature. It is surrounded by a bank of Laurels, partly to conceal it from the house, to which it was contiguous. In some places these Laurels approached the gravel; but, in others, there were spaces of several yards in width, and these spaces were all filled with beautiful flowers—many of them our best bedding plants. All these plants are chiefly managed by the groom in his spare time. On expressing to him our warm approval, he replied, "That they certainly looked better than the nettles and thistles that *would* grow," and which are too often found nestling in such situations. An attempt at the artistic had even been made, by cooking-up some broken and discarded crockery ware into shells and vases, and filling them with flowers. A few hollow pollards, and rough roots, would come in well in such circumstances. If we do not mistake, the chief and only entrance to the servants' offices is through this yard, and thus our fellow-labourer, the groom, will daily not only increase in himself, but diffuse around him, a taste and love for the beautiful. Last season, at several places, I noticed the windows of living and sleeping-rooms, in several noblemen's stable-yards, well supplied with flourishing plants in pots. This is a step in the right direction. Who will undertake to say that the most attentive gardener would here prove the less faithful and attentive to his peculiar duties?

LAWN, FLOWER-GARDEN, AND SHRUBBERY. — When last I saw these, a man was rolling the lawn to disperse the dew, that it might sooner be fit for walking on; another was picking up any stray leaf upon the walks; and a third, with a large sponge, was drying up, on the paths, the water that had been left from a copious syringing of the houses in the morning. If there was less attention to some of these minutiae on the present occasion, we do not think that the general effect was at all injured. I could fancy how fine the masses and clumps of shrubbery had been—supplied with splendid groups of the best kinds of Rhododendrons, with wide open glades of velvet turf between them. Mr. Manning showed us a patriarch *Solanum crispum*, covering a large space, and producing innumerable flowers. It was the same plant, though moved from its first position, that Mr. Phillips had taken me to see, some sixteen years ago, as the finest out-door plant of that *Solanum* then in England.

Mr. Manning here pointed out to me one of those clever adaptations of ground scenery which combine into “a unity of expression,” what would, otherwise, have been associated with the discordant in taste, or the limited in extent. At the south side of the pleasure-ground was a sloping bank, cropped with vegetables; at the bottom of it a dell, planted with Spruce firs; beyond these, separated by a fence, the public road, by which we had passed; and on the other side the ground sloped upwards, until the eye rested on a fine meadow, or park, on the same level as the platform on which the house and pleasure-grounds were situated. Now, the boundary of the pleasure-ground was so planted, the Spruce trees were so prevented obtruding their spire-like tops, to suggest anything like a boundary line, or an obstruction to the view, that, as you walked through the flower-beds on the lawn, you could not but take the park-like ground referred to as part of the premises, or separated from the more dressed part by an invisible wire fence, or something of that kind; and if not actually pointed out to you, the vegetable bank, the trees and the road, would, so far as you were concerned, have had no existence.

The lawn was, perhaps, rather liberally and regularly supplied with largish beds, filled to overflowing with luxuriant plants in full bloom, such as *Ageratums*; a good white *Petunia*; *Flower-of-the-Day Geranium*; my old favourite, *Kentish Hero*, *Calceolarias*, in full feather, without a diseased leaf. A splendid bed of the *Ecnothera macrocarpa*, quite dazzling with its large yellow flowers; another bed of *Lobelia grandiflora*; plenty of *Scarlet Geraniums*, and various kinds of *Calceolarias*, and some fine old plants of *Punch* in baskets. *Verbenas*, with the exception of *Barkerii* (which seems to have done badly almost everywhere this season) were in fine condition, and chiefly arranged in a group of small beds by themselves. Now, this very group seemed to strike a keynote as to how the flower-beds might be changed; I will not say improved, for the whole thing is very beautiful. Imagine a very neat, small mansion, with a pretty conservatory at its east end, and the boundary of offices and kitchen garden at the west end. Close to the western end is the entrance to the garden-front of the mansion, and thence proceeds the main gravel-walk. In the middle of the building is a large bay-window, commanding the sweep of the whole of the flower-beds, backed as these are with the masses of shrubs, with bold glades of turf between. Now, the question is, whether it would be better to leave the beds as they are—largish in size, with corresponding widths of turf between, or to have the beds individually smaller, and placed closer together in several separate groups, which would thus permit of bolder and wider glades of turf between them. For instance, some might wish a group near the

window—well, this would permit of a space of open turf on each side, and, considerably farther on, another group might be placed right and left. Or, again, others might wish to have a wide, winding glade of velvet turf opposite the window, and, in this case, the groups might be arranged on either side, and so as to give a bold outline, without uniformity or tameness. I hope all parties will pardon these remarks, as questions on these matters I find to be very puzzling. The whole affair wants *ventilating*. In opposition to some of my friends, I am of opinion, that in grouping beds with separate colours, the beds should not be far apart. Here, the contrasting or blending of colour should be the chief object. I would have the *green* chiefly enjoyed in open spaces and glades by itself.

ROSARY.—This is large, but the beauty was gone. Starting with a circle, the narrow beds are arranged one after the other in the circular form, with gravel paths between, thus affording room for a great many plants in the space, and an opportunity of easily examining them individually.

PRESERVING CURRANTS ON THE BUSHES.—This mode, adopted by Mr. Phillips, is still persevered in. Mr. Manning says they keep good until Christmas, and often later. A slight circular frame of iron is formed, large enough to stand over the bush; this is neatly surrounded with gauze netting. A tin or zinc lid, somewhat raised in the centre, like one for a large copper, covers the top, and projects an inch or so over the edge. This admits of easily examining and gathering, and keeps the fruit dry. The gauze admits plenty of air, and yet prevents even a small fly intruding. How soon would the annual outlay for mats, &c., for such a purpose, amount to the first cost of such convenient articles, and yet, after all, make but a sorry substitute. There are many penny savings the reverse of economy.

HOUSES.—These, whatever may have been the original intention with respect to them, are all obliged to take their turn as plant-houses. I have mentioned formerly, somewhere, how they used to clothe the back walls of these fruit-houses. In a peach-house, trees right up the glass, were some fine old greenhouse plants against the wall; and when the leaves of the peach fall, the house becomes a greenhouse. A vinery was ornamented with Camellias, well set for buds, on the wall, and this, too, was only a tributary to the plant departments.

PLANTS.—The *Lantana crocea* was used very successfully in the flower garden as a bedding plant, though in this exposed place I have been beaten with it several times. *Chinese Chrysanthemums*: there was a long row of these, in largish pots, plunged in coal ashes, close to a shaded south wall, all raised from cuttings in spring, each with three or more shoots one foot or fifteen inches in length, already neatly tied out, and the leaves so healthy and fine as not to leave a doubt as to their splendour in the beginning of winter. As soon as the nights get cold, a shelter from the top of the wall will be provided for them. Compelled to let this tribe alone for a season, I felt anything but like Reynard and the grapes, in looking at that beautiful row of plants. The conservatory was showy with *Achimenes* and *Liliums*; among the latter, *macranthum* seemed to be richer and finer than the older *rubrum*. In the same house was a fine basket of *Stanhopea oculata*, with seven large bunches of flowers. On the roof of a small stove, *Bignonia venusta* was showing signs of soon being a mass of bloom. In one house was a beautiful plant of *Azalea variegata*, in a large pot, but the pot next to hid by the dependent branches; the plant some five feet through in diameter, and from three to four feet in height. Such a plant could neither be moved nor turned easily, so it has been furnished with a small stand for itself, and the top of it supplied with a pivot circular

wheel—so that the plant can be moved round with the greatest ease, and no doubt many a whirl it gets, to keep it from getting the least one-sided.

In front of the houses, several *Yucca gloriosa* were in bloom; and on the borders I noticed two very dwarf, pretty, new annuals—*Sedum azureum* and *Nyctarina uliginoides*.

Having rarely spent a hour in a small compact garden with so much pleasure, I have tried, from recollection, to place the elements of that pleasure within reach of many who wish to make their small gardens interesting; and, if I have made any mistake, I trust to Mr. Manning's kindness to correct or explain.

R. FISH.

JOTTINGS BY THE WAY.

(Continued from page 381.)

CHATSWORTH (The Duke of Devonshire).—This princely residence, sometimes denominated "the Palace of the Peak," is famous for its gardening. The genius of Sir Joseph Paxton has made it so. When he first obtained the appointment it was a very mediocre affair. I have been assured there was nothing there then but the commonest of plants. The Rhododendron was then scarcely found there, but I am sure I speak within bounds, when I state that Sir Joseph has planted there 30,000 of this ornamental shrub. In various other points the place has been brought to the high state of culture in which we now see it.

I have been in the habit of visiting it almost annually for the last twenty years, and have watched the progress of the gardens with the greatest interest. I well remember calling one day and meeting with Sir Joseph Paxton at home. He showed me a model of the large conservatory that he had made, and very kindly pointed out his intentions and the objects in view. I recollect, that he told me why the Duke had wished to have a large house built. In a hothouse, not far from the mansion, there was growing a *Ficus elastica*; it had reached the roof, and was forcing its way through. The Duke said he should like to have a house built for it large enough to show it to advantage. Sometime previous to this, a ridge-and-furrow greenhouse of some extent had been put up near Sir Joseph's house in the lower gardens. The ridge-and-furrow system allows of any extent of ground to be covered with glass, and, therefore, that system was adopted in forming the roof of the large conservatory at Chatsworth, which again led to the erection of the Crystal Palace in Hyde Park, and eventually to that now in progress at Sydeham. From such apparently trifling causes arise effects, the magnitude of which the imagination could not possibly conceive or anticipate.

With these brief reminiscences of my first visits to Chatsworth, I shall now turn to my notes made on my last visit. There has been a new house built for Sir Joseph to live in; and in forming a lawn and flower-garden in front of it, it was necessary to remove the old carriage-road to the back. This road is very cleverly concealed from the house by raised banks, planted with evergreens; and the soil between them is covered with turf brought from the Derbyshire moors. This turf is not grass, but very dwarf plants of wild heath, bilberry, cranberry, and other low, wild British shrubs. This turf answers several purposes—it prevents weeds growing—it keeps the soil moist and cool in summer, and warm in winter: hence the Rhododendrons, Laurustinuses, &c., have grown surprisingly, and are now well set with flowers for next year.

Walking round from the entrance-gate, the visitors are conducted to a pair of large folding-doors. When these are opened, the first object that is seen is the new

Victoria House—a square building, with a ridge-and-furrow roof. I did not learn the exact size, but I judge it must be at least ninety feet across. In the centre, there is a large circular tank, for the far-famed *Victoria regia*, which first flowered in Europe here. It was in flower the day I was there. Now, a circular tank, in the centre of a square house, leaves a considerable space at each corner. These spaces are filled up with smaller tanks, in which are planted the various species of *Nymphaea*, *Nelumbiums*, and other stove aquatics. I noted the following in flower:—*Nymphaea cœrulea*, many flowers, and highly-coloured; *Nymphaea Devoniana*, a crimson-flowered species, very fine, with dark-coloured, deeply-indented leaves; * *Nymphaea alba*, many blooms, sweetly-scented; *Nelumbium hybridum*, very distinct; the flower was extraordinarily large, being nine inches in diameter; it is white, delicately tinted with pink; the foliage, though large, is not much dissimilar to *Nelumbium speciosum*. In one corner of one of these smaller tanks was a species of *Pontederia* in flower, with spikes of bloom, of the richest blue colour. In the spaces between the leaves of the *Victoria*, there was placed, upon pots, several pots of *Achimenes* nicely in bloom, and also several of the rarer kinds of Ferns. These had a good effect, making a gay appearance.

From this very interesting house, I was shown into the Orchid houses, filled with plants in great health, and many in bloom. I believe, conscientiously, there are a sufficient number of plants to fill as much more space as they are now placed in. The following were in fine bloom:—*Oncidium Lanceanum*, several plants. *Oncidium papilio*, with many blooms, and the best variety. *Oncidium leuchochilum superbum*, a beautiful good variety. *Aerides quinquevulnerum*, a good plant. *Dendrobium chrysanthum*, two very large plants, well bloomed. Of *Cattleyas*, several species. *Miltonia spectabile*, a good batch. *Stanhopeas*, various species. *Phalanopsis*, several plants. *Calanthe masuca*, five spikes; and many other species. In the same house, I saw a most extraordinary specimen of that curious plant, the *Sarracenia purpurea*. It had very large pitchers, and was in flower. The size of the plant, however, was its chief attraction. It was fully one-and-a-half feet in diameter, and completely filled the large pot in which it grew. Near it stood a good plant of *Sarracenia Drummondii*, with its long-necked, spotted pitchers. I noted, also, an excellent specimen of the rare, New Holland, pitcher plant, the *Cephalotes follicularis*, with a goodly number of its curiously-bordered, pitcher-shaped leaves.

T. APPLEBY.

(To be continued.)

ROSE CULTURE

(Continued from page 382.)

PRUNING.—CLASS 15.—ROSA MOSCHATA (The Musk-scented Roses).—This class of Roses grows strong and upright, and blooms most profusely during the latter part of the year. Should any one or more strong shoots take the lead of the rest, I always cut them clean out about the end of July. The season for the general pruning is in spring; and, as they are free bloomers, they will bear heavy pruning—that is, cut-in to three or four buds from the old wood. If the head is thin, the summer shoots may have the ends nipped off, which will cause the same year's buds to break, and form a compact, dense head of shoots, each of which are sure to flower well.

CLASS 16.—PERPETUAL MOSS.—Requires pruning at the same time as the summer-blooming Moss Rose.

* This is said to be hardy. I saw it growing and flowering in a small pond in these gardens; but a hot water pipe was carried round the pond.

Should there be a tendency to produce flowers early, it should be counteracted by nipping off the buds as soon as they appear. Indeed, all Roses called perpetual should be confined to bloom only after the bulk of the summer-bloomers are out of bloom. The very object for which the perpetuals are valued is the property of blooming in the autumn; but if they are allowed to bloom early, that property will be in great measure destroyed, and then the amateur says *the term perpetual is all deception!* I heard one say the very words only a few days ago. His perpetuals had been allowed to bear the first crop of bloom along with the Provence, Gallicas, and Damask summer Roses; and, consequently, he will have to wait a month, or more, before he has any Roses on the true perpetuals, or autumn-bloomers. Now, had the first buds been nipped off, as I have suggested, they would have immediately made fresh shoots, and formed flower-buds ready to burst forth in primeval beauty as soon as the early bloomers had finished their work.

CLASS 17.—PERPETUAL DAMASK.—Prune these at the same season as the summer Damask, and attend to the remarks just given above about the nipping off the first buds.

CLASS 18.—HYBRID PERPETUALS.—This large class of Roses requires pruning with great care. Many of them are hybrids of China and Bourbon Roses, and are, consequently, rather tender. I would recommend, in consequence, the pruning to be delayed till the severer part of the weather in early spring has passed away. This, I think, generally happens about the beginning of April, and then is the best time to prune the Chinese hybrids. They require close pruning, though the very vigorous growers may be left a little longer—such, for instance, as the *Duchess of Sutherland*, *Jacques Lafitte*, *Madame Laffay*, or *Soliel d'Austerlitz* Roses. Let me be distinctly understood: by close pruning, I mean the previous year's shoots should be cut into within two, or, at most, three, buds of the old wood; but with such free growers as I have just mentioned, leave as many as five buds, or even, in very vigorous growths, seven buds would not be too many. Let the pruning, then, be regulated according to the habit of each variety in growth.

CLASS 19.—CHINA ROSES.—These Roses are, as is well known, most abundant bloomers, and, consequently, require severe pruning, as well as plenty of encouragement at the roots. Wherever they are planted out in beds, the soil should be rich and rather lighter than for other classes of Roses. The season for pruning is the time recommended for the last class, namely, the first week or so in April. It is well known they flower in large open bunches; now, as soon as any one of these bunches has dropped all, or nearly all, its flowers, the shoot that has produced it should be immediately cut close in. If that is done to each shoot in succession, there will be, as a matter of course, a succession of flowers all through the season until the frost stops their growth.

CLASSES 20, 21, 22.—THE BOURBON, NOISETTE, AND TEA-SCENTED ROSES all require the same treatment when grown in the border of beds as is described for China Roses.

I will now, as briefly as possible, bring to the consideration of our readers, a few remarks on *Pruning Roses in pots*, more especially those intended to force. The season for this work, in this case, depends upon the season they are desired to be in bloom. For early work, they should be pruned as soon as the leaves turn yellow. The mode of doing it must be considered and attended to. If the kinds to be forced are vigorous growers, such as *Brenus* and *Fulgens*, and others of similar habit, the shoots should be well thinned-out; and those intended for flowering only, just shortened-in

a little; but weak growers, such as most of the Tea-scented, should be shortened-in to two or three buds, in fact, cut down almost to the ground; that is, when grown on their own roots. The pruning of other classes of Roses in pots should be carried on through the summer, in regard to thinning the roots and pruning off the flower-buds; the latter point, especially, should be attended to in all weak growers. I saw an instance, very lately, near Liverpool, in a zealous cultivator's garden. He never could get the Bourbon Rose, *Paul Joseph*, to grow well in a pot, until he adopted the plan of nipping off all the blossom-buds as they appeared during the summer training for forcing the following season, but by doing so diligently, the plants, when I saw them, had made numerous medium-sized shoots, and the plant was quite healthy.

The season for pruning Roses in pots, will be, for early bloom, about the middle of November; and for late bloom, the middle of March. Autumnal Roses, in pots, may be had in full bloom as late as September, or even December, by pruning off the rose-buds as they appear, till within six weeks or two months of the time the flowers are wished for. By paying due attention to pruning, indeed, Roses may be had all the year, with the aid of a pit heated with hot water and a greenhouse.

T. APPLEBY.

REMARKS ON THE SEASON.

(Continued from page 383.)

CONTINUING the remarks on the various productions of the season, we now come to that queen of flowers, *the Rose*, of whose qualifications so much has been said of late, and so much diversity of opinion regarding the well or ill blooming of the many sections into which this interesting family is divided; but without going much into that matter, we may premise, that in many instances the late severe winter made sad havoc amongst the more tender kinds, especially the "Tea," some being said to be killed outright, others so much injured as to render it impossible for them to bloom well in the early part of the season; and as many growers pay much attention to this section, the disappointment their failure causes, will, no doubt, account for the outcry against the season in general. I believe I have mentioned before, that what Tea-Roses I have here suffered but little from the effects of the winter; but I am no particular advocate for this variety, and have but very few. The absence of a healthy foliage, or, in some cases, almost total want of any, which this variety universally presents, seems to me to more than counterbalance the fragrance and fine blooms which they undoubtedly possess to a degree superior to that of many other perpetual blooming Roses; but when we can obtain the scent of the "Tea" Rose imparted to a variety having the form, &c., of *Coup d'Hebe*, and others, and the glossy foliage of the *Yellow Banksian* added thereto, we will then begin to curtail the long array of names into which our Rose lists are paraded forth. This desideratum, however, I leave to those having more leisure and a more extended knowledge of the family; at the same time, I cannot but wish that some of the great growers would pay a little more attention to foliage than has hitherto been the case. Assuredly, all Roses are not grown to be cut into small bunches for "flower shows," irrespective of the character of the plant they come from. Some are necessarily left at home, and when there present a pleasing feature by their habit of growth, and healthy, unspotted foliage. Now, it cannot be denied but that Horticultural Societies, in giving prizes for Roses in pots, have done much to encourage a healthier state of things, in so far as regards cultivating only those of good habit, &c.; but,

we think, that sufficient has not yet been done to exclude those of shabby foliage from such stands.

Returning to the subject of Roses blooming this season, I certainly have no reason to complain; perhaps the "Gallica," were less prolific than on some years, but this has been amply made up by the "Perpetuals," which have bloomed more abundantly than usual; and the blank which, more or less, takes place in August, between the early and autumn-blooming kinds, is certainly less this season than I ever remember witnessing. This I attribute to the abundant rains which fell in the usual blooming season invigorating the plant, so as to enable it to continue forming fresh buds, while a hot season and heavy crop of flowers too often leave the plant exhausted, that a partial rest is necessary before another blooming season can be effected. Whether the general autumn display be diminished or not, in consequence of this intermediate period being better furnished than in general, time alone will determine; but I do not expect it will, the secretions necessary to furnish a supply of blooms at that period are generally produced at the time, and not laid up in store months before, like the embryo buds of a fruit-tree, or the trusses of a Strawberry. Autumn Roses are the creature of the season, and may generally be depended upon, in tolerable abundance, where the plant has maintained anything like a healthy character up to the period of its blooming; so that if the void common in August can be made up, there is little or no danger of not having Roses in September. However, as the subject of Roses has been dealt with by other hands, I shall say no more than again repeat: that, in a general way, the present season has been, with me, a successful one in their flowering.

Coming next to vegetables, we fear much diversity of opinion will exist. The cold, wet spring occasioned many things to perish, which the severe winter had left unkilld; that *Cauliflower* plants were, in some districts, at a premium; even *Cabbages* were much hurt; and the absence of anything like mild weather checked their growth, so that the "first cut" was much later than is common amongst those noticing such things. *Potatoes* were as much diseased, with me, in the frame, in April, as they are in the open ground in August; and that is worse than on any preceding season—1846 and 1849 perhaps excepted. This unfortunate subject I, however, leave, and shall be glad to hear of cases wherein cultivation and treatment of a practical kind has been able to keep this invidious enemy at a distance, but for the present I leave it. *Peas* have been difficult to preserve from the slugs, which are more than usually numerous this year, so that many crops had to be sown over again, and that repeatedly; where they did succeed, there has been an abundance of haulm, perhaps too much on cool damp soils; but as the soil here is the reverse to that the summer has suited them well. A similar difficulty existed in rearing *Kidney Beans*, but these once got up, and a fair start made, have done well since; while the *Salad* crops, of all kinds, have derived the full benefit which a showery season is expected to impart to them, not, however, without the usual drawbacks of having a difficulty to obtain "a plant," in many instances, owing to the number and voracity of their enemies; however, *Radishes* have been less hot, and *Lettuce* less inclined to "run," than usual; and though we may have a period of dry weather, yet still the autumn dews, and long evenings, will, in a measure, protect most crops from suffering much from drought. *Broad Beans* have been more prolific in haulm than of pods, and, in some places, complaints have been made of their not setting well, or of being blighted in foliage afterwards. Last year, many fields of Beans were ploughed up after blossoming, the latter becoming a bortive or useless. This season the injury is from

other causes, and certainly not so general in its effects. One thing, the quantity of moisture, and excess of haulm, must account for the deficiency of air with which the blooms were surrounded, and hence the failure is not greater than might reasonably be expected. *Onions* have been good; and though at the period at which I write are not yet ripe, yet they promise well, but they were with difficulty saved from the enemies of young vegetation, who, however, preyed with more violence on *Carrots* at that early period; in fact, this vegetable is a more especial favourite with the numbers of the lower orders of creation than most things, and even at an advanced period, rabbits prefer its tops to that of anything else. The crop, this season, certainly does not look well, yet it may be a fair average one, as the district I write from, is not, by any means, a good one for this vegetable.

The more tender productions, as ridge *Cucumbers*, *Vegetable Marrow*, &c., have certainly failed to furnish their usual contingent to the "bill of fare" so early as on more sunny seasons, but they are as little affected by mildew as common, and may continue to bear tolerably well yet; but *Tomatoes* will assuredly be late, and may, possibly, not ripen at all, except in favoured situations; the same may be said of *Chilies*, &c., while amongst the smaller things, as the tender sweet herbs, there has been a difficulty to preserve them against the attacks of vermin, which existed in such numbers where the ground was so much below the temperature these delicate plants delight in. However, where care has been exercised, the necessary quantity of these may also be forthcoming, as there is a wide difference between growing a plant and perfecting its fruit; an herb may be brought into use when it is impossible to ripen a *Capsicum*, or a *Love-apple*, that, on the whole, we have some doubts of the latter being brought into plentiful use this season at all.

In concluding these notices of the season, I must not omit to mention the extra amount of labour that continued wet weather has created, in the shape of innumerable weeds, as well the unceasing growth of grass on lawns, and other places kept short; while, as will be seen by every one, the destruction of weeds is a more difficult matter in a wet season than in a dry one—hence the difficulty of preserving the proper degree of order, &c., so necessary in all departments. However, we may, perhaps, have a fine autumn, and the plants which have hitherto been retarded in growth may make more progress in such time as is yet left for them; while we may reasonably expect those which have been rambling away to an almost reckless extent may have exhausted themselves, and remain more at home, flowering or consolidating themselves so as to resist cold when it approaches, if they have it to endure. It is, therefore, on this principle, that we expect the autumn produce of grass to be less than the majority of past seasons. If the latter should be dry and unpropitious, more especially in those districts where dry weather does affect the growth, which it hardly will do on cold, stiff soils in some latitudes; in fact, in such, warm sunshine will be beneficial to its growth, as well as to more tender productions.

J. ROBSON.

HARVESTING BARLEY.

BARLEY must be considered as one of the most valuable of our grain products, not only on account of its supplying a beverage to a large portion of our population, but also as being, next to Wheat, the most valuable of the farmer's grain produce upon a considerable proportion of the land of this kingdom; indeed, upon many light land farms, in different parts of the country, it is

the only grain crop grown for sale, Wheat being rejected as too uncertain.

It is, therefore, highly desirable that Barley should be harvested with great care and judgment, from the fact that the value of the grain will depend, in a great measure, upon its having been cut and harvested at the proper period; for, although the time of sowing, the nature of the soil, and the climate, will have their influence upon the quality of the grain, yet its value for malting purposes may be greatly affected by the method, as well as the time selected for harvesting.

The superiority of the Barley grown in England over that of foreign countries, may be attributed, in a great measure, to the mode of managing the crop at harvest time. Most of the foreign samples are steely and unkind, attributable, in some measure, perhaps, to the soil, and partly to premature ripening, caused by the excessive heat of the climate; but, in most instances, it may be traced to the effect of too early cutting.

Barley differs from all other kinds of grain in being depreciated by early cutting. It should always be allowed to stand until dead ripe, if required for malting purposes. The corn will then become mellow and kind; a common rule, as regards ripeness, is indicated by a wrinkled and shrivelled appearance of the skin of the grain, and the ear drooping and pointing to the earth.

The mode of harvesting Barley varies in different districts. In some counties, it is a common practice to cut this crop with the scythe, and tie it into sheaves, the same as for the Oat crop, but this mode is not general, it being found to require longer exposure in the field, thereby increasing the risk of damage by rain; and as it is usual to grow Clover amongst the crop, it is not, on this account also, desirable to tie into sheaves.

In general harvest-work, tying the crop is not attended with advantages, for although the carting is less expensive, yet the labour of tying increases the expenses.

The best, and, it may be said, the most usual, method of managing the Barley crop is to cut with the scythe, and allow it to remain in swarth until it is fit to carry to the barn, or stack,—taking care to have the swarths turned, when clover is found amongst the crop, as often as may be required, to prevent heating in the mow or stack, as no grain is so worthless as that which has been over-heated in the stack, having had imparted to it thereby a taste so objectionable as to render it almost valueless, even for mealting purposes. There is, also, another advantage when Barley is mown and carted as loose corn: that is, it can remain in swarth, and take the dews of night; and, in some very dry, hot summers, when the grain is inclined to be flinty and unkind, it will be wonderfully improved for malting purposes by the alternate action of dews and sunshine upon the grain.

The value of Barley straw, as fodder, is a great consideration (particularly in seasons when the Hay crop has been damaged), and when Clover is found amongst the corn it adds greatly to the value of the fodder, if secured in a dry state; and this is certainly done best and quickest when the crop is harvested in a loose form.

It is a common practice, as soon as the corn is fit to carry to the stack, to have it forked into pook, and the land raked, and the crop allowed to remain a day, or several days, previous to carting; but I object to this mode of proceeding, for in case rain intervenes, the corn in pook does not dry so quickly, and the grain is liable to waste in opening and separating the pooks for the purpose of drying. I prefer to pook the crop, and rake the land, just before the approach of the waggons for carrying the crop; for when the corn is fit to pook, it is fit to be carted also. It is, therefore, better, in case of rain, that the crop should receive it in swarth, as it may then, by one turning, become in condition for carting without loss. It should, also, at the time of harvest, be considered at what time it may be desirable to thrash the corn; and the crop should be stacked, or placed in the barn accordingly. It is generally the best method to put the loose corn into barn, there being less waste; whilst Wheat and sheaved Oats are best adapted for ricks, as being less wasteful.

When it is necessary to make the Barley crop into ricks, being the produce of outlying fields, or from other circumstances, it is desirable to make the stacks small, or, otherwise, long and narrow, in order that a portion may be cut across, and carted as required (about as much as may be secured in a short winter day), this crop being mostly required during the winter months, both as regards the grain and the fodder. After the stacks have been made up, and properly thatched, let the outsides be thrashed with sticks, to beat out the corn exposed on the outside, which may be saved by laying a sail-cloth upon the ground to receive the grain as it falls during the process of thrashing: if this operation be not attended to at the proper time the birds will be sure to take all the grain which may be exposed.

JOSEPH BLUNDELL.

ALLOTMENT FARMING.—SEPTEMBER.

At last, real summer weather; and what a charming duty it is to record it after months of querulousness. But much damage has occurred which may not be recovered by any means; and what with the immense National loss which has accrued in things connected with the soil, together with the chances of a war of no trifling character, it is to be feared, on behalf of such classes as those for whom our labours are intended, that the ensuing winter may be one of high price.

This, in one respect, will suit our landlords, who think that they have encountered, one time or other, sufficient depressions; but even to them, there are other bearings of this subject which point to prospective matters of serious considerations.

Whatever may be the prices of animal diet, cheese, &c; there is one thing that concerns the humbler classes of society far more; and that is, what are termed our bread-stuffs.

As to *wheat*, there can be little doubt, that it can neither reach the average quantity or quality, unless it can be shown that much greater breadths have been sown, or that Foreign harvests have been good in the aggregate. There is, however, some reason to doubt both one and the other.

It behoves, then, the allotment man, and the gardening cottager, to look well after their winter roots, as being the next in point of importance to our bread-stuffs, and, indeed, to every other little article in their plot, which may tend to produce winter comforts, and to keep the shopkeeper's

hand out of their pockets; and, we may indeed add, to produce a few shillings in the market. The first thing I will allude to, then, is the POTATO.

Everybody knows, too well, that the disease has been at work again; and in earnest. Nevertheless, I do not think that it by any means increases, but rather the contrary. It does not present exactly the same features now as when it first paid its afflicting visitation. To be sure, from the high prices occasionally realised, in consequence of scarcity, much greater breadths have been planted than we were ever accustomed to previously. The history of the Potato is, indeed, somewhat extraordinary in this respect: disease, or no disease, the increase of breadth, annually, since its first recognition as a useful vegetable, has been, perhaps, greater than that of any of our corn or root-crops. If any thing can match it in this respect, it is probably the Swede Turnip. High culture of this invaluable root has been very generally recognised, in later years, as the basis of good husbandry; as leading to increase of stock, and a consequent increase of the mildew; and about the importance of the latter consideration we shall find very little difference of opinion, providing it increased as a necessary consequence of improved systems.

But the Potato: what shall we say is the difference in the character of the disease now, as compared with some half-dozen years since? It is, I think, in this: that the decay once commenced, in its early visitations it ran on in a more continuous way, and for a much longer period: we now seem to reach a crisis betimes, and one of a much more favourable character than occurred in its first developments.

That crisis, I do hope, is now at hand, August 12th, for it certainly has not proceeded with the virulence with which it commenced for the last week or so. If this be correct, it would seem to point to its entire cessation in another year or two, providing all parties will look well to their seed, and be not so eager to force the crop to an unusual degree of luxuriance, which looks, indeed, most flattering whilst the plant is young, but is altogether deception.

Our friends, like ourselves, will be puzzled to know how to make the best of their Potatoes; they will come to hand too fast for them. Perhaps, the very best plan is to make them into pork. This is my plan, and that of many in these quarters. It is only buying another pig or two, according to needs; but these pigs should be of the prick-eared kind—half-bred China, or Neapolitan, are capital, as they lay on flesh directly, at any age; and this is a most essential point at this period, especially as an extra pig, to a poor man, tends to compromise the feeding of his principal hog, and many depend on this for paying their rents. Certain it is, that much of the Potato stock, unless speedily worked up, is lost. Fowls are particularly partial to these half-decayed Potatoes; and it is common practice, in this quarter, to let them have the run of the worst Potatoes, which they will be constantly picking at. But such, steamed or boiled, and crushed with a little meal of any kind, or bran, mixed, makes a capital diet for them. I do still think, that where Potatoes are a strong crop, and the haulm much injured by disease, that it is good practice to cut off the haulm at once, and to leave them in the ground until the soil is dusty, and the weather dry, and then to dig them, and, after carefully sorting them, to spread them on a dry floor. I practised this last year, and I never had Potatoes kept better in my days; they were the astonishment of those who saw them. They were spread over a boarded floor in an upstairs room; they lay there for nearly three weeks, at the end of which time they were looked over, and any decaying ones removed; they were then bagged or pitted, but not *below the ground level*. A high and dry piece of ground was selected, and a little dry wheat straw placed beneath and around them; the Potatoes were piled to a sharp ridge of three feet; they were then soiled over two inches in thickness, the soil being taken from each side the pit caused them to appear quite above the ground level. In the beginning of December, nine inches more soil was laid on, and this was all the trouble they caused. I did not lose five per cent, and they remained some time in the pit—until April.

I must now turn my attention to other root-crops in succession, for these, as I have often observed, are the allotment man's chief consideration in ordinary cases.

MANGOLD.—Little can be done beyond a thorough cleaning, if any weeds remain. I like to draw a little soil to the

long red kind, in order to preserve the surface roots, but our farmers have been against the practice, though why, I cannot tell.

SWEDES.—Those transplanted after Potatoes, or other summer crops, will require the hoe through them, to break the crust, and, of course, all weeds thoroughly subdued. Those sown in April, to remain, will now be bulbing fast; let weeds be removed here also.

COMMON TURNIPS.—Those sown in July and the early part of August will need a careful hoeing and thinning, and if there be any coarse weeds they had better be hand-picked. Turnips are generally hoed at twice. At the first they are merely "singled or roughed," and at the second, about a fortnight after, set out at final distance. The *Early Dutch* may still be sown in the first week, on warm plots, for spring Turnips.

CARROTS.—If the grub has taken these, their ground will offer a good chance for a crop of Coleworts, from a sowing in the end of June. Those, as before observed, will pay well in market at Christmas. Carrot crops will require hand-weeding, and, in some cases, a final thinning. If any of the *Early Horn* kind are left, they will be ripe enough to remove.

PARSNIPS.—Weed and thin, if requisite.

ONIONS.—By the time this reaches our readers our Onions will be housed, their ground manured, and a crop of Coleworts, at about one foot apart, planted. We have the finest crop, this year, I ever saw; the admiration of everybody. The bulbs nearly touch each other over the bed; and I have three beds, each fifty yards long, by four feet in width, uniformly covered in this way, without a blank, and this, too, on soil fearfully liable to grub. The soil was trenched three feet deep, bringing up subsoil, and they were dressed with soot twice—once in the beginning, and once in the end of June. They are sown in beds raised one foot above the surface by throwing up the alleys, and this always gives us an earlier harvest by a fortnight or three weeks than any we see.

CABBAGEWORTS.—Coleworts I before alluded to. It is still time to plant a breadth for late purposes. They should, however, be got out in the first week, and the ground manured. Such, if an early-hearting and dwarf kind, will come into use in February and March. *Brocolis*, *Kale*, *Brussels Sprouts*, *Savoy*s, &c., have, of course, been got out long since. They will require cleaning of weeds, and, of course, the hoe plied liberally. It is a common practice to heap soil up their stems, but this practice must not be carried too far. It certainly is a very off-hand and convenient plan to do so, in order to prevent storms from throwing them prostrate. I must confess, that I was once of opinion, that liberal earthing was of much advantage, but I have seen reasons to doubt any extreme application of the principle. Nevertheless, I still think, that when deep hoeing, and a thorough extirpation of weeds can be effected, that in the end of August, or first week of September, the drawing a little soil to the stems will be a real benefit—all things duly considered. Such things as *Brussels Sprouts*, *Green Kale*, and *Brocolis*, suffer much at times, by the storms of old October, and the high level of fibres engendered by this soiling is a pretty good safeguard.

Those who desire to have early spring *Lettuces* must sow some *Bath Cos*, and *Hammersmith Cabbage Lettuce*, on a high, dry, and warm bed, in the first week. Little else will be needed now. As concluding remarks, I will say, let extra diligence, during the former portion of the autumn, go far to compensate the industrious for the saddening effects of a bad summer; and let us all take heart, by feeling assured there may yet be excellent seasons in store for us, when, by the blessing of God, we shall feel as much reason for warmheartedness, as but too many have, through the past weather, for depression of feelings and gloom.

R. ERRINGTON.

APIARIAN'S CALENDAR—SEPTEMBER.

By J. H. Payne, Esq., Author of "*The Bee Keeper's Guide*," &c.

REMOVING SUPERS.—It is now quite time to remove glasses and supers of every kind from hives intended for stocks, and to see that each one contains at least twenty pounds of honey,

if not — they had better at once be made up to that weight by feeding. At this time of year, I would recommend syrup, in preference to barley-sugar, because it can be given in larger quantities, and stored more quickly. The proportions should be one pound of loaf sugar, one quarter pint of water, and one quarter of a pound of honey, simmered together for five minutes over a slow fire, or till the sugar is melted.

UNITING STOCKS.—Where this is desired, it may be done either by driving, fumigating, or cutting out the combs, and treating the bees so deprived like a fresh-bived second swarm that is going to be united to another. Killing the queen is quite unnecessary, for the bees themselves will do that.

FUMIGATING.—For those who prefer fumigating to driving, the *Racodium cellare*, or mouse-skin byssus, will be found the best material for the purpose. It abounds in the wine-vaults of the London docks, and in almost every wine and beer vault in London, and it is sold also by Messrs. Neighbour and Sons, 127, High Holborn, London.

NORTH ASPECT FOR BEES.—The request I made to have the opinion of those persons, who, at my suggestion, placed their bees in a north aspect, has been very kindly responded to from several quarters, and, upon the whole, the reports are in its favour. One letter, signed "J. S.," I will give at length:—

"I have much pleasure in complying with your request for information with respect to a north aspect for bees. The following notes were made during the late disastrous winter and spring, at least to us Southern. I should premise, that my hives and boxes stand, with one exception, in a house capable of being opened on all sides, and the top raised, and facing the north. *January*—The bees actively at work in pollen. *February*—Except on the 7th, confined by cold weather until *March* 4th, when they set to briskly till the 14th, when the weather confined them till the 28th. *April*—After the 10th, at work very much, and not so many blown down as in a south aspect. *May*—Until the 15th not a drone appeared, on the 21st made three artificial swarms, *à la Country Curate*, which are doing as well as the season will admit; one is now, *July* the 12th, working in three caps, two others made on the 11th of June are doing as well, as are all the old stocks. They have, in each case, become very populous, from all I hear of losses, and late swarms; and in numerous cases, not any swarms at all. The earliest was on the 26th of May, and that only in one instance. The lateness is attributed to the season; much as this may have to do with the subject, aspect will be found to have more. Every one must have observed that in a south aspect the bees are tempted out by a warm sun, when a cold north-east wind is blowing, and, in consequence, they are blown down, benumbed, and perish, decreasing their numbers at the most critical time. How different in a north aspect! The bees are not tempted out by the sun, but are kept at home by the cold wind, the warmth of the sun being just sufficient to increase the heat of the hives, and to put the bees in motion, which excites the queen, and the population increases. Notwithstanding the unfavourable weather for work, I have never yet seen a cottager take the precaution to screen his bees from the winter sun; but induce them to change the aspect, and that precaution is unnecessary. In confirmation of a north aspect being the best, in October last I had one hive, which weighed only sixteen pounds, live, bees, and honey; this I placed out of the house, covered simply with a milk-pan, and facing the north, screened from the east by a privet hedge, and within six feet of it; had this hive faced the south, with such a winter, I have no doubt I should have lost it, or fed it very much; instead of which, I gave it only one pound of barley-sugar in the spring, and it gave me an excellent swarm on the 11th of June, which, with the parent, are doing well.—J. S."

KITCHENER'S VENTILATED PASSAGE.—This has not been a year for using this appendage to the apiary. In a good honey season it may be used with great advantage.

SEA WEEDS.—No. 8.

(Continued from page 389.)

We come now to the sixth and last order of Melanosperms.

ECTOCARPACEÆ.

"Olive-coloured, articulated filiform Sea-weeds, whose spores are (generally) external, attached to the pointed ramuli."—*Harvey*.

Though the Ectocarpaceæ are the lowest of the olive-coloured *Algae*, as regards organization, yet among them may be found elegant and beautiful structure, requiring the help of the microscope to display it to advantage.

"Not a tree,
A plant, a leaf, a blossom, but contains
A folio volume."

SUB-ORDER 1.—SPHACELAURIÆ.

1. CLADOSTEPHUS.

"Frond inarticulate, rigid, cellular, whorled, with short, articulated, sub-simple ramuli. Fruit elliptical, pedicellate. Name from two words, signifying a branch and a crown."—*Harvey*.

1. *CLADOSTEPHUS VERTICILLATUS* (Whorled).—The branches are slender, and forked at the ends; whorled at short intervals; colour olive green or brown, becoming darker when dried; 3—9 inches high.

2. *C. ROCYIOSUS*.—Somewhat thick and clumsy, rather like Chenille, thickly imbricated; colour dull olive-green, but when young the tips are of a full rich green. Common.

2. SPHACELARIA.

"Filaments jointed, rigid, pinnated. Apices of the branches distended, membranous, containing a dark granular mass; fructification oval spores, borne on the ramuli. Name from a word signifying gangrene, from the withered tips of the branches."—*Harvey*.

1. *SPHACELARIA FILICHA* (Fern-like).—This beautiful Fern-like Sphacelaria is very rare, and found only on our southern shores. I have had beautiful specimens of it from Guernsey, where it seems to be found in some abundance. These specimens were hoary, with the rare little Zoophyte, *Anquinarina spatulata*. The plants are from 2—4 inches high; from the tips of the stalks numerous small branches spread like a fan; very delicate and beautiful; colour pale olive-green.

2. *S. SERTULARIA*.—Smaller than the last; very rare. South of England, Jersey, and Ireland.

3. *S. SCOPARIA*.—On rocks under water, and in tide-pools. A coarse-looking plant of a dark brown colour, with woolly fibres on the lower part; very bushy. "South of England, frequent." "Firth of Forth, but not common." From 2—4 inches high.

4. *S. PLUMOSA* (Feathered).—On rocks, and in rock pools. *Harvey* says that this is a northern plant. I have found it at Flimby, on the Cumberland coast; it is extremely pretty, resembling small feathers. My specimen was very dark, almost black. Dr. Landsborough speaks of it as of a light olive, and almost as broad as the feathers of a robin's wing. I have one of this colour from the Isle of Man.

5. *S. CIRRHOSA*.—A very common kind, growing on other *Algae*; a variable plant; sometimes "detached and floating about in little balls."—*Rev. Dr. Landsborough*.

6. *S. FUSCA*.—"Filaments brown; branches long and simple; spores globose."—*Harvey*.

Very rare. The only specimen I have seen is from Exmouth. It has been found at Sidmouth, and St. Michael's Mount, Cornwall.

7. *S. RADICANS* (Rooting).—In the sea, on rocks covered with sand; colour dull olive; rigid. Rather rare.

8. *S. RACEMOSA* (Branched).—"Allied to the last, but larger." Firth of Forth.—*Sir John Richardson*.

SUB-ORDER 2.—ECTOCARPEÆ.

Filaments capillary, jointed, olive or brown, flaccid, single-tubed. Fruit either spherical, or lanceolate capsules, borne on the ramuli, or imbedded in their substance. Name from two Greek words, meaning external fruit.—*Harvey*.

ECTOCARPUS.

1. ECTOCARPUS SILICULOSUS (Podded).—Pale yellow-olive tufts; soft, slender, and much branched; common; 6—18 inches long; soon decomposing in fresh water.
2. E. AMPHIBIUS.—Short, soft, pale olive tufts. "In tide ditches."
3. E. FENESTRATUS.—Of a pale green; slender; small tufts.
4. E. FASCICULATUS.—Thick olive tufts; 1—2 inches high; parasitic on the larger *Algae*. Not uncommon.
5. E. HINCKSIE.—First noticed by Miss Hincks, at Ballycastle, Giant's Causeway. Parasitical on *Laminaria bulbosa*. Dark olive, and tufted.
6. E. TOMENTOSUS (Downy).—With a sponge-like branching frond, olive or brownish. On rocks and larger *Algae*. Not uncommon.
7. E. CRINITUS (Tressed).—"Muddy sea-shores, in fleeces of a bright bay." Found by Mrs. Griffith, in Devonshire.
8. E. PUSILLUS (Dwarf).—"Like a tuft of pale brown wool." Torquay, Mrs. Griffiths; and Land's End, Mr. Ralfe.
9. E. DISTORTUS (Deformed).—Tufts deep brown; matted; 4—8 inches long. On *Zostera*.
10. E. LANDSBURGH.—In honour of the Rev. Dr. Landsborough, who dredged it in Lamlash Bay, and says—"It has not much beauty to recommend it, but it is a little curiosity." Like the Scotch Thistle, it is armed at all points, and says, as plainly as a hundred dirks can say it—"Wha daur meddle wi' me?"
11. E. LITORALIS.—Thick tufts of a dirty brown colour. Very common all the year round.
12. E. LONGIFRUCTUS (Long-fruited).—Much resembling *E. litoralis*, but the fruit larger.



13. E. GRANULOSUS (Grained).—Of a green or yellow colour; the branches feathery, and graceful. The one from which our plate is taken, I found on the fine shores of Bamborough, Northumberland, of which I purpose saying something in another paper.
14. E. SPHEROPHORUS.—1—3 inches long. Parasitical on *Plilota sericea*, and *Cladophora rupestris*. Not common, but in various places, says Harvey, from Orkney to Cornwall.
15. E. BRACHIATUS (Branched).—"Tufted, feathery, and much branched." Rare. On *Rhodomenia palmata*.
16. E. MERTENSII.—"On mud covered rocks and stones. The branches resembling delicate feathers. Colour fine olive green. A very beautiful species."

4. MYRIOTRICHIA.

"Filaments capillary, flaccid-jointed (simple), beset on all sides with a simple spine-like ramuli, clothed with byssoid fibres. Fructification elliptical spores containing a dark-coloured, granular mass, within a transparent perispre. Name from two Greek words, signifying numberless and a hair."—Harvey.

1. MYRIOTRICHIA CLAVIFORMIS (Club-shaped).—Growing on *Chorda lomentaria*. The stem is thickly set with branches

which increase in length upwards, and make the frond look club-shaped. Discovered by Miss Hutchins forty years ago.

2. M. FILIFORMIS (Thread-like).—Stem thread-like, sometimes curled. On *Chorda lomentaria*. Not uncommon in England and Ireland.

How surprising the variety in form of the plants contained in this large order of Melanospermæ; some of them surpassing in length the tallest forest trees, while others require the aid of a microscope to develop their delicate beauty! "In the deep bays of the southern hemisphere, along the shores of the Falklands, and among the Archipelago of Cape Horn, the species of *Lessonia* and *Durvillea* resemble submarine trees, with gigantic leaves pendant from the tips of robust branches."—(Harvey.) The works of God are wonderful; their variety is endless; their beauty surpassing; they present a boundless supply of food for interesting meditation to the most cultivated mind, and also to those, who, having been deprived by poverty or other circumstances of much education, are still permitted to read, page after page, in nature's own large volume, feeling the mind expanded by the revelations of wisdom, something of the mind of God made known to us in His wonderful works. "All thy works shall praise thee, and thy saints shall bless thee."—S. B.

(To be continued.)

AGRICULTURAL IMPLEMENTS AT THE NEW YORK CRYSTAL PALACE.

We are truly an agricultural people. If there was no other proof of this fact, the display of the products of peace made by our countrymen in the present industrial exhibitions would be in itself a sufficient vindication of the assertion. Other nations represented in the great fair may excel in other departments of the peaceful arts, but the United States is first in everything pertaining to agriculture. The ingenuity of our people has met every necessity for husbanding the productions of our fruitful domains with machinery which almost defies the powers of the most skilful to improve or supersede. Invention in our country has been made to do more labour upon the farm than, perhaps, in any other nation on the globe. Among the many curious and valuable inventions which are worthy the examination of all interested in the progress of our people, is one from the Old Dominion, called "*The Farmer's Labour-saving Machine*," invented by Elisha S. Snyder. This is a new machine, and never, we believe, before the present time, was exhibited to the public. It looks some like a winnowing mill, excepting that it is much larger. Every farmer in the land will hail it as his best friend, if it accomplishes, what it promises, which we have no reason to doubt. It is designed to thresh, clean, measure, and bag one hundred bushels of grain per day. It also throws off smut, cheat, and other impurities, and prepares the grain ready cleaned and sacked for market, all by the same operation. The one on exhibition is of two horse power, but they may be made of any power wished, the amount of work they are able to accomplish being dependent upon their size. If needed, they may be made for hand power, and used in place of the common fanning-mill for cleaning rye, oats, corn, &c., A machine of six-horse power, and attended by seven hands, will thresh, clean, and bag the very large amount of two hundred and fifty bushels of wheat, ready for the mill, in one day. It can require no argument to prove the superiority of this invention, if it acts as it purports. What its greatest powers are has not yet been decided, as it has not been in use for a period long enough to properly test it. But it is stated, that one of these machines of one-eighth horse power, has already threshed, cleaned, and bagged forty thousand bushels of grain, and the cost of repairs in the separating and cleaning apparatus did not exceed five dollars in doing this amount of work. We can suggest no improvement to this invention, unless it be the addition of other powers, making it capable, also, of grinding the grain, mixing the dough, and baking the bread, which improvements would not astonish us, owing to the ingenuity already manifested by the wonderful inventions of our countrymen. Farmers and scientific men should examine Mr. Snyder's invention.

Gibbs' rotary spade, made in the District of Columbia, is another machine in the agricultural department which is much praised by those competent to judge as to the merits of new inventions. This is designed to supersede the plough in many instances. It is not intended for breaking up new or heavy sward ground, but more particularly for tilled land. It consists of a very simple arrangement, by which a sort of trowel-shaped spade is thrust into the earth, throwing it up behind a revolving wheel, in which these spades are fixed. Two heavy iron wheels, of about two feet in diameter, stand upright in a simple frame, and projecting around the edges of these wheels are the diggers, if we may so call them, which the weight of the machine presses into the ground. These diggers are slightly curved, and will break the earth a few inches on each side. The two wheels of this machine are placed about six inches apart; they meet each other in breaking the ground between them, and together will plough a width of two feet. Wheels can be added to these, cutting the earth as to width according to one's pleasure. They are somewhat more costly than the ordinary plough, but much more durable. We should think them heavy to draw, and unwieldy; but they are reported otherwise by those who have seen them used. It is well for those interested in farming implements to examine them; but we would rather see them in operation before we more fully speak of their efficacy or superiority.—*New York Herald*.

GREAT YARMOUTH AND EASTERN COUNTIES' POULTRY SHOW.

THIS was on the 16th, 17th, and 18th instant. The attendance was very good, and we have no doubt that it will be a profitable Show. The old birds were sadly out of condition in nearly all the adult classes. In Class 2, *Cochin-China Chickens*, there were 80 pens, and in them some very first-rate birds, rendering it difficult for the Judges to make their awards, so many having great merit. In Spanish full-grown birds, Mr. Fox, in the absence of Capt. Hornby, took 1st and 2nd prizes. Some of the Dorking Chickens were very good; and all other classes, but especially *Ducks*, well represented. Mr. Fairlie, Mr. Potts, and Mr. Adkins, came in for their share of the spoil.

JUDGES.—Samuel Nutt, Esq., London, late of York; James Henry Catling, Esq., King-street, Portman-square, London.

Class I.—COCHIN-CHINA.—CINNAMON AND BUFF. (Cock and two Hens.)

12. First prize, John Fairlie, Cheveley Park, Newmarket, two years. 6. Second prize, T. H. Potts, Kingswood Lodge, Croydon, various.

Class II.—CINNAMON AND BUFF. (Cock and two Pullets of 1853.)

42. First prize, J. Eason, Thurlow Lodge, Norwood, six-and-half months. 29. Second prize, H. Sparham, Brigadier Hill, Enfield, five months. 31. Third prize, H. Gilbert, 17, Upper Phillimore-place, Kensington, twenty weeks. 45. Third prize, John Fairlie, Cheveley Park, Newmarket, six months.

(This class very meritorious.)

Class III.—BROWN AND PARTRIDGE-COLOURED. (Cock and two Hens.)

6. First prize, John F. Chater, Haverhill, eighteen months. 5. Second prize, Charles Punchard, Blunts Hall, Haverhill, above one year.

Class IV.—BROWN AND PARTRIDGE-COLOURED. (Cock and two Pullets of 1853.)

10. First prize, John Fairlie, Cheveley Park, Newmarket, six months. 11. Second prize, John Fairlie, Cheveley Park, Newmarket, four months.

Class V.—WHITE. (Cock and two Hens.)

5. First prize, John Fairlie, Cheveley Park, Newmarket, eighteen months. 6. Second prize, W. C. Reynolds, Great Yarmouth, one year.

Class VI.—WHITE. (Cock and two Pullets of 1853.)

1. First prize, Christopher Rawson, The Hurst, Walton-on-Thames, seventeen weeks. 2. Second prize, Christopher Rawson, The Hurst, Walton-on-Thames, seventeen weeks.

Class 7.—BLACK. (Cock and two Hens.)

2. First prize, T. H. Fox, 44, Skinner-street, London, various. 1. Second prize, Christopher Rawson, Walton-on-Thames, one year.

Class 8.—BLACK. (Cock and two Pullets of 1853.)

9. First prize, E. H. L. Preston, Great Yarmouth, three months. 6. Second prize, John Fairlie, Cheveley Park, Newmarket, five months.

Class IX.—SPANISH. (Cock and two Hens.)

8. First prize, T. H. Fox, 44, Skinner-street, London, various. 7. Second prize, T. H. Fox, 44, Skinner-street, London, various.

Class X.—(Cock and two Pullets of 1853.)

5. First prize, Rev. Philip Gardon, Cranworth Rectory, Shipdham, four months and two months. 4. Second prize, Rev. Philip Gardon, Cranworth Rectory, Shipdham, four-and-a-half months.

Class XI.—DORKING. (Cock and two Hens.)

8. First prize, George Tredcroft, Sennowe Guest, two years. 11. Second prize, John Fairlie, Cheveley Park, Newmarket, two years.

Class XII. (Cock and two Pullets of 1853.)

9. First prize, T. H. Potts, Kingswood Lodge, Croydon, six months. 6. Second prize, Rev. Philip Gardon, Cranworth Rectory, Shipdham, five months.

Class XIII.—MALAY. (Cock and two Hens.)

2. First prize, Isaac C. Dowsing, North-end, Great Yarmouth, fourteen months. Second prize withheld.

Class XV.—GAME FOWL.—BLACK-BREASTED AND OTHER REDS. (Cock and two Hens.)

1. First prize, Capt. F. Alexander, Reydon, Suffolk, full age. 3. Second prize, Abraham Cannell, Cringleford, Norfolk, two years.

Class XVI.—BLACK-BREASTED AND OTHER REDS. (Cock and two Pullets of 1853.)

1. Second prize, Gent Wigg, Acle, Norfolk, eleven weeks. First prize withheld.

Class XVII.—WHITE AND PILE. (Cock and two Hens.)

1. Second prize, George Groom, Norwich, two years.

Class XVIII.—WHITE AND PILE. (Cock and two Pullets of 1853.)

1. First prize, John Buckley, Desford, Leicester, twelve weeks.

Class XXI.—POLAND FOWL.—BLACK WITH WHITE CRESTS. (Cock and two Hens.)

4. First prize, Augustus Balls, Harold's Park, Nazing, Essex. 3. Second prize, Rev. Clement Gilbert, Bramerton Lodge, Norwich, eleven months.

Class XXII.—BLACK WITH WHITE CRESTS. (Cock and two Pullets of 1853.)

1. Second prize, Christopher Rawson, Walton-on-Thames, fifteen weeks. First prize withheld.

Class XXIII.—GOLDEN. (Cock and two Hens.)

2. First prize, T. H. Potts, Kingswood Lodge, Croydon, various. 1. Second prize, Christopher Rawson, Walton-on-Thames, aged.

Class XXIV.—GOLDEN. (Cock and two Pullets of 1853.)

1. Second prize, Christopher Rawson, Walton-on-Thames, eleven weeks. First prize withheld.

Class XXV.—SILVER. (Cock and two Hens.)

1. First prize, Christopher Rawson, Walton-on-Thames, aged. 2. Second prize, T. H. Potts, Kingswood Lodge, Croydon, various. (This class meritorious.)

Class XXVI.—SILVER. (Cock and two Pullets of 1853.)

5. First prize, Henry Youell, Yarmouth, three months. 4. Second prize, T. H. Potts, Kingswood Lodge, Croydon, eleven weeks.

Class XXVII.—HAMBURGH.—GOLDEN-PENCILLED. (Cock and two Hens.)

4. First prize, Rev. T. L. Fellowes, Beighton Rectory, full. 5. Second prize, T. Thorpe, Norwich, full.

Class XXVIII.—GOLDEN-PENCILLED. (Cock and two Pullets of 1853.)

4. First prize, Rev. T. L. Fellowes, Beighton Rectory, Acle, three and four months. 1. Second prize, Christopher Rawson, Walton-on-Thames, three months.

Class XXIX.—GOLDEN-SPANGLED. (Cock and two Hens.)

6. First prize, Rev. T. L. Fellowes, Beighton Rectory, full. 4. Second prize, G. C. Adkins, Edgbaston, Birmingham, not known. (This class not meritorious.)

Class XXX.—GOLDEN-SPANGLED. (Cock and two Pullets of 1853.)

3. First prize, Thomas Church, Acle, Norfolk, four months. Second prize withheld.

Class XXXI.—SILVER-PENCILLED. (Cock and two Hens.)

2. First prize, Charles Thurnall, Whittlesford, Cambridge, eighteen months. 5. Second prize, G. C. Adkins, Edgbaston, Birmingham, not known.

Class XXXII.—SILVER-PENCILLED. (Cock and two Pullets of 1853.)

2. First prize, Christopher Rawson, Walton-on-Thames, six months. 4. Second prize, Charles Thurnall, Whittlesford, Cambridge, four-and-a-half months.

Class XXXIII.—SILVER-SPANGLED. (Cock and two Hens.)

1. First prize, Christopher Rawson, Walton-on-Thames, aged. 5. Second prize, Thomas McCann, Graham House, Malvern, not known.

Class XXXIV.—SILVER-SPANGLED. (Cock and two Pullets of 1853.)

4. First prize, Henry P. Dowson, Geldeston, 14 weeks. 2. Second prize, John Fairlie, Cheveley Park, Newmarket, five months.

Class XXXV.—FOR ANY OTHER DISTINCT BREED. (Cock and two Hens.)

7. First prize, T. H. Potts, Kingswood Lodge, Croydon, various. White Polands. 4. Second prize, Lady Paget, Sennowe Guist, two years. Scotch Bakes.

Class XXXVI. (Cock and two Pullets of 1853.)

10. First prize, John Fairlie, Cheveley Park, Brahma Poutras, Twenty weeks. 2. Second prize, Rev. J. N. Micklethwait, Horstead, Norwich. Andalusians. Four and three months.

Class XXXVII.—BANTAMS.—GOLD-LACED OR PENCILLED. (Cock and two Hens.)

7. First prize, Henry D. Palmer, Southtown, Yarmouth, two years. 8. Second prize, Henry D. Palmer, Southtown, Yarmouth, two years.

Class XXXVIII.—SILVER-LACED OR PENCILLED. (Cock and two Hens.)

1. First prize, Christopher Rawson, Walton-on-Thames, one year. 2. Second prize, James Monsey, Thorne Lane, Norwich, eighteen months.

Class XXXIX.—BLACK. (Cock and two Hens.)

10. First prize, James Monsey, Thorne Lane, Norwich, eighteen months. 6. Second prize, John Fairlie, Cheveley Park, one-year-and-a-half.

Class XL.—WHITE. (Cock and two Hens.)

4. First prize, James Monsey, Thorne Lane, Norwich, eighteen months. 8. Second prize, Arthur Pratt, Sprowston Lodge, one year.

Class XLI.—GEESE. (Gander and two Geese.)

1. First prize, Christopher Rawson, Walton-on-Thames, one year. 4. Second prize, John Fairlie, Cheveley Park, one-year-and-a-half.

Class XLII. (Three Goslings of 1853.)

2. First prize, John Fairlie, Cheveley Park, five-and-a-half weeks. 1. Second prize, Christopher Rawson, Walton-on-Thames, sixteen weeks.

Class XLIII.—DUCKS.—AYLESBURY. (Drake and two Ducks.)

6. First prize, John Fairlie, Cheveley Park, two years. 1. Second prize, Christopher Rawson, Walton-on-Thames, not known.

Class XLIV.—ROUEN. (Drake and two Ducks.)

2. First prize, John Henry Sams, Clare, three months.

Class XLV.—ANY OTHER VARIETY. (Drake and two Ducks.)

5. First prize, John Henry Sams, Clare. White Muscovy. Full. 8. Second prize, W. Woods, 26, Park-place, Kensington, London. Gigantic Domestic Duck.

Class XLVI.—FOR ANY OTHER VARIETY. (Three Ducklings.)

3. Second prize, Rev. E. H. Kittoc, Chadwell Rectory, Gray's, Essex, ten weeks.

Class XLVIII.—TURKEYS.—WHITE. (Cock and two Hens.)

1. First prize, John Fairlie, Cheveley Park, one-year-and-a-half.

Class XLIX.—ANY OTHER COLOUR. (Cock and two Hens.)

3. First prize, John Fairlie, Cheveley Park, sixteen months.

Class L. (Three Poults of 1853.)

1. First prize, John Fairlie, Cheveley Park, six months.

Class LI.—PIGEONS.

4. Augustus Balls, Nazing, Essex. Black Carriers. 6. Augustus Balls, Nazing, Essex. Red Pouters. 5. G. C. Adkins, Edgbaston, Birmingham. Carriers. 10. Augustus Balls, Nazing, Essex. Red Tumblers. 16. John Playford, Great Yarmouth. Short-faced, Black, Mottled Tumblers. 18. G. C. Adkins, Edgbaston, Birmingham. Barbs. 19. Christopher Rawson, Walton-on-Thames. Runts. 21. Augustus Balls, Nazing, Essex. Blue Dragons. 26. G. C. Adkins, Edgbaston, Birmingham. Owls. 29. W. H. Goddard, Edgbaston, Birmingham. White Fantails. One year. 31. W. H. Goddard, Edgbaston, Birmingham. Black Fantails. One year. 33. Christopher Rawson, Walton-on-Thames. Turbits. One year. 40. G. C. Adkins, Edgbaston, Birmingham. Jacobins. 42. W. H. Goddard, Edgbaston, Birmingham. Mottled Trumpeters. 45. G. C. Adkins, Edgbaston, Birmingham. Poreclains.

SCRAPS FROM MY NOTE BOOK

HORSERADISH—In taking a short walk in the neighbourhood of Uxbridge, I saw, in the garden of one of the cottagers, a number of draining-pipes, standing erect, with the leaves of the horseradish protruding through the top: the sight exciting my curiosity, I called upon the occupier to learn the why and because. I will, as shortly as possible, state his explanation. Horseradish, Sir, is generally planted in trenches from one to two feet deep, and you will observe, that unlike a carrot, instead of growing down into the earth, its growth has an upward tendency; but then it is difficult to get really good, thick, straight sticks, they are generally forked and small. They are also very difficult afterwards to eradicate, and, therefore, become troublesome weeds. My plan is to get draining-tiles one foot long, and about 1½ or 2 inches diameter (costing here 3s. per 100); the ground is well manured, and trenched two spits deep, and the crowns are planted in rows, and are only just covered with mould, and the pipes placed immediately over them and slightly earthed up to prevent their falling. I plant in November, and by the following year, at about Christmas, each pipe will be filled with a straight, solid stick of horseradish. No digging is required to gather the roots, the pipes and roots have merely to be pulled up, and the crown again planted in a similar man-

ner. My informant was a respectable man, and I have no reason to doubt his statement. I intend to try his plan. Some of your readers may also, perhaps, do likewise.

CHEAP TRELLIS FOR CUCUMBERS OR MELONS—As soon as the plants have had their last moulding-up of earth, place pea sticks at the bottom of the pit or frame, laid one across the other, and let the vines be trained over them (the sticks are laid pretty thickly). This plan will be found far superior to growing them on the ground, and, by creating a kind of hollow chamber under the vines, causes a nice genial heat; indeed, it possesses nearly all the advantages of the trellis.

FILTERING PAPER—The following, though, perhaps, not strictly appropriate to a Gardening Periodical, may prove useful to some of your readers. The writer, some time since, upon taking the tap out of a cask of bitter ale, which had been tilted till all the beer was supposed to have been drawn, discovered a considerable quantity of dregs and hops remaining; they were emptied out through the bung-hole, and the hops were squeezed out, and the muddy-looking liquor put into a funnel, lined with filtering paper in the usual manner; the end of the funnel being placed into a glass bottle, the quantity of good beer, as fine as crystal, obtained, consisted of nearly three (so called) quart bottles, which were corked, and in three weeks were very excellent: the cost of the sheet of filtering paper (obtainable at any stationer's) was one halfpenny; the beer, if it had been purchased in the bottle, would have cost at least two shillings. —J.M.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of the Cottage Gardener, 2, Amen Corner, Palernoster Row, London.*"

CINERARIA SPORT (A. M. E.)—This is a very singular and uncommon sport indeed—"instead of the usual rays round the circumference of the flower, there are a number of small, distinct, double flowers, something like the hen and chicken Daisy." We saw a double blue *Cineraria* in 1845; and a correspondent, at Durham, sent us word of a double one he had raised in 1849, or 1850, but we know nothing more of either, and we suppose they died without increase. Pray take good care of your sport; if possible, get a few cuttings from it, as no reliance can be placed on saving the old plant after seeding. The seeds are likely to produce the sport in a more developed form, judging by analogy. The order of Composites is more prone to give double flowers, so to speak, than any other in the vegetable kingdom.

HYMENOPHYLLUM TUNBRIDGENSE—We hear from Messrs. Weeks and Co., King's Road, Chelsea, that they have a large patch of *Hymenophyllum Tunbridgense* measuring eighteen inches by twelve inches, which is certainly an extraordinary fine specimen of this rare Fern.

FANCY AND SCARLET GERANIUMS (An Amateur, see page 331)—It was meant that stress should be laid on the words, *a little dry*. They are not so succulent, and, therefore, should not be dried so much as the strong-growing old florist kinds; neither should the plants be kept so dry for a week or so afterwards, but, instead of watering them much, syringe the stems, and moisten the ground or material on which they stand, and only water rather freely when the shoots have broken regularly, and then you need not be long in shifting. Your frame will do very well for standing these skeleton plants in, but we very often let them break out-of-doors. We seldom cut back the slow-growing, hard-wooded fancies so freely as we do a succulent florist *Pelargonium*; and not only in this, but in every part of their growth, they require rather more care, but they repay it all by the long time they delight us with their bloom. *Scarlet Geraniums* that we mean for pots, &c., in summer and autumn, we prune as we pot for the winter, being guided by the room we can spare, and the size we wish to have them.

TEA ROSES (Ibid.)—These done blooming, plunge out-of-doors, they will probably then bloom in winter, or autumn, if taken in-doors. If kept out, protect from frost, and prune and mulch in April or May. The closer you cut them, the finer will be your flowers; but you will have to wait longer for them. They are well deserving of house room in spring and early summer, as the flowers are delicious then. When kept in beds, out-of-doors, they generally require to be cut-in rather close in April, and then, if the place is warm enough, they will yield strong shoots and good bloom in July and August.

CALCEOLARIAS CUT DOWN (Ibid.)—These, you say, show no symptom of life. You should have looked after the cuttings. Most of these fine, large kinds are next to impossible to keep otherwise than by cuttings; and some defy the best attempts then, and, therefore, most people raise every year from seeds. You would see full directions about this lately.

FLOWERS IN A GREENHOUSE AT CHRISTMAS (Sarah)—Let the house average at night from 45° to 50°. Then have bulbs, such as *Tulips* and *Hyacinths*, potted as soon as they can be got, and helped with a hotbed, after being rooted. *Chinese Primroses*, *Perpetual Carnations*, *Salvia splendens* and *fulgens*; *Epacris impressa*, and kindred sorts: *Erica hyemalis*, *E. Linnæoides*, *E. Willmoreana*, &c.; *Genista lini-*

folia, *Cytisus proliferus*, and *canariensis*; *Coronilla glauca*, *Daphne odora indica*; *Cinerarias*, potted early in autumn; *Scarlet Geraniums*, allowed to bloom but little in summer; *Camellias*, *Mignonette*, sow now; late-flowering *Chrysanthemums*, &c.

BOTTOM-HEAT TO PINES, BY PIPES (*A Constant Reader*).—See an article by Mr. Fish lately. For a pit ten feet wide, two four-inch pipes will be amply sufficient in the chamber: but you had better have two other pipes for top-heat. You will see, in the article referred to, how Mr. Fleming manages, by bringing the return-pipe under the bed. Very likely you would choose to have the top and bottom-heat separate. Have means of getting water to this chamber when you wish at any time a moist, bottom-heat. Have the top pipe supplied with evaporating pans, or troughs, by all means.

MARKING QUEEN BEES (*A.*).—Mr. Payne has never marked a queen in any way, but it has been done very successfully by Mr. Golding and others. It should be the queen of a cast, or second swarm, which is always a young queen, and done instantly after hiving. Taking a small piece off the antennæ would be better than the wing.

BEES.—*C. J. B.* "wishes to know where feeding-troughs can be bought, and for information in the following case:—A very strong May swarm, weighing now over 30 lb., and too numerous for the hive; will they have time to collect sufficient for the winter if put on a hive stool, and the old hive taken? The hive has been covered externally with dense masses of bees for the last three weeks, and little or no working appears to be going on." All kinds of feeding-troughs may be purchased of Messrs. Neighbour, and Marriott, London. Your hive weighing 30 lb. must remain as it is, unless you break it up entirely, and unite the bees to another stock; the population will now be decreasing rapidly, by the killing of drones and the death of workers, so that these will have room in plenty within the hive.

QUINCES (*An Amateur, Queen's County*).—We sent your letter to Mr. Errington, he replies:—We can scarcely imagine what can be the reason of your Quinces not 'setting' their blossoms. It cannot be a matter of soil, as you have one in moist ground, and the other dry. Neither can it be deep roots, as one has been transplanted two years' since. The Quince is rather precocious as to blossoming; try and retard one next spring, so as to make it blossom a fortnight later, at least. You will find advice in back numbers about retardation.

PINUS INSIGNIS (*No Signature*).—We never said that *Pinus insignis* was grown 6 ft. 6 in. in a season, anywhere; and we do not know how to grow it so rapidly, or believe one word of the story.

CLARIFYING LIQUID-MANURE (*Ibid*).—This process does not add to, or reduce, the strength of liquid-manure, only reduces its value a little; but lime is not at all the best clarifier—garden soil is by far the best for the purpose. The question is one of those convenient ones that will suit either side of an argument. If you believe that clarification will improve the liquid, it is quite sure to turn out your way, under your own management; but if you bottle some of it, and give it to a friend who has no faith in it, you will soon hear that a whole crop was spoiled by your nostrum; but the literal meaning is—it does neither good nor harm.

VINE BORDER (*I. H. N.*).—Oyster-shells, broken into small pieces, will be a good mixture with the soil of your vine border. All chalky matters, in a small proportion, are useful in such borders, and oyster-shells are nearly pure chalk (carbonate of lime).

VERBENA VENOSA (*W. P. B.*).—You can obtain this of any of the large London Florists.

BAGGING GRAPE (*A Young Vine*).—Bag them as soon as nearly ripe. We know of no other mode of keeping flies from them. It is too late to hatch Shanghai chickens this year.

SCALING LEAVES (*A. M. L.*).—If the brown marks on leaves are caused by the sun's rays falling on them, it is the excessive heat of those rays which does the mischief. This is proved by the fact, that no injury occurs, however fast the moisture is evaporated, if the bright rays of the sun are absent.

CARMAN'S STOVES (*F. J. L.*).—Never having used them to exclude cold from plants, we can give no evidence either in favour of or against their efficiency.

GAPES IN CHICKENS.—*M. R.* says—"I am very much obliged to your correspondents for their information as to curing the gapes in chicken, though I am sorry to say I have not benefited by it. As to the drawing-up the worms with a feather, I cannot manage it all; I think I push them lower down in the wind-pipe. But as precaution is better than cure, I write to say, that I have succeeded in rearing a brood of twenty chicken without the complaint, by placing them, as soon as hatched, with the hen, in a room in an outhouse, and giving them water that had been boiled to drink. This room has an open window exposed to the sun; but, as I found that when they were four weeks old they began to droop from the want of more fresh air, as I supposed, I turned them out, when they soon revived, and have continued quite well. They are now about seven weeks old."

SILVER POLISH FOWLS (*T. K. A.*).—Their tepknots ought to be white entirely. The white variety, with a perfectly black topknot, is still a desideratum.

MILDEW ON MELON PLANTS (*J. R.*).—Dusting with flowers of sulphur, and keeping the air in the frame as dry as is compatible with growth, are your only remedies.

BLIGHT ON VERBENAS (*Arula*).—What you call the blight is really a case of long neglected attack of the red spider. Dust frequently under the leaves, with a mixture of two parts soot, two parts flowers of sulphur, and one part Scotch snuff.

TAIL OF SILVER-PENCILLED HAMBURGH COCK (*Z. Y.*).—When we said the tail should be black, we spoke of its ground colour. If it had not some of its feathers partly marked, or edged with white, the bird would be rejected by the judges.

UNBEARDED POLANDS (*Scrutator*).—The very fact which you state, of there being only one pen of unbearded Poland at the Baker-street Exhibition, is a strong evidence that the breeders of Poland consider

the beards desirable. Our correspondent adds—"I also remarked, that lacing was always rewarded with a prize, and that although no really laced birds were exhibited, there was a very great improvement in this respect. The question why *Black Poland* with white crests have no beards, if they be so essential, has not yet been answered?" The only answer to this is, that this variety of Poland never have them.

FEEDING DUCKS (*A. B.*).—To keep ducks from trampling in their food, put it into a trough behind a railing, through which they can only put their head and neck. Cutting off the head is the most speedy and least painful mode of killing either ducks or chickens.

MOTH (*T. M. W.*).—It is a very common one, the Drinker (*Odonestis potatoria*).

ORLEANS PLUM (*S. O. L.*).—The withering away of the tree immediately after the cutting away of the watery side-shoots was a curious coincidence, but nothing more. The death of the tree arose probably from its roots perishing, and this occasioned by their being in an unfavourable subsoil, saturated with wet during the late winter and summer. At all events, nothing would be more likely to kill it.

BRAHMA POUTRAS (*W.*).—We cannot plead guilty to having not declared our opinion of these birds.

LANDLORD AND TENANT (*Amateur*).—We fear you have no right to remove your greenhouse; and we are quite sure that you were wrong in cutting down the Apple and Walnut-trees, without permission, to make room for the erection. We should not be lenient if we were your landlord. If tenants would but do as they would be done by in these matters there would not be so many after-complaints. Why not obtain a landlord's consent beforehand?

NAMES OF PLANTS (*W. P. Hume*).—No. 1. *Veronica elegans*. No. 2. *V. orchidea*. No. 3. *V. neglecta*. No. 4. *Cistopteris fragilis*. It is always desirable a lower leaf should accompany the specimens of the flowers.

CALENDAR FOR SEPTEMBER.

FRUIT FORCING.

AIR, give freely in all houses. AIR-MOISTURE, reduce the amount gradually. BOTTOM-HEAT must gradually decline; say at least one degree weekly until November. CUCUMBERS, for winter work, must be got forward with similar attention as in spring. CHERRIES for forcing may be potted or shifted. CLEANING: let all glass be thoroughly cleaned this month; all painting, lime-washing, done also. FIGS, water late crops. FORCING (EARLY), prepare for by getting things to rest. FLUES, clean. GRAPE, watch ripe berries, use the scissors, remove laterals from. INSECTS, of all kinds subdue. LININGS, attend to. MELONS, late, give spring culture to; beware of damps. NECTARINES, see *Peaches*. PINES, continue forward culture; water late swellers; repot last successions; and harden off the latter class in snug pits. PEACHES, remove late laterals; stop remaining leaders; syringe freely; and water at root moderately. PAINTING, carry out. REPAIRS, complete. RED SPINER, subdue. STRAWBERRIES, in pots, give high culture to; keep them plunged above ground level. VENTILATION, attend well to. VINES, progressively remove laterals from late crops; apply fire heat daily in all dull weather. VERMIN, destroy. WASPS, destroy nests. R. ERRINGTON.

FRUIT GARDEN.

APPLES, gather as they are ready. APRICOTS, stop all growing wood, and remove all spray which shades the buds. BERRIES, gather. BUNNING, slacken bandages. CURRANTS, cover to preserve. CHERRIES, late, beware of birds and wasps. CRANBERRIES, collect. DAMSONS, gather. FIGS, stop all shoots, and thin out spray. GOOSEBERRIES, destroy caterpillars, and retard late kinds. INSECTS, subdue. MULBERRIES, gather. NUTS, gather and store. NECTARINES, see *Peaches*. PLUMS, protect from wasps. PEARS, stop all shoots, reduce coarse breast wood. PEACHES, stop all shoots, remove foliage from ripening fruit. STRAWBERRIES, plant; destroy runners. TOMATOES, stop growing. VINES, stop every shoot and reduce laterals. VERMIN, destroy. R. ERRINGTON.

FLOWER GARDEN.

ACONITE (Winter), plant e. ANEMONES, plant best, e.; sow, b. ANNUALS (Hardy), sow, b. AURICULAS not shifted in August now remove; water and shade; prepare awning to protect in autumn and winter; sow, b. BUN perpetual Roses to the end of the month. BULBOUS-ROOTS, plant for early blooming, e. CARNATION layers remove, b. CHRYSANTHEMUMS, plant cuttings, &c., b. CUT ROUND THE ROOTS of large specimens intended to be taken up next month, b. Cut in large specimens of geraniums &c., in the beds to be potted, as soon as they break, to make specimens of, b. CUTTINGS of evergreens, put in, b. DAHLIAS, number and make list of, while in perfection, describing their colour, height, &c. DRESS borders assiduously. EDGINGS, trim, plant. EVERGREENS, plant, b.; make layers. FIBROUS-ROOTED perennials, propagate by slips, parting roots, &c. GRASS, mow and roll; sow, b. GRAVEL, weed and roll. GUERNSEY LILIES, pot. HEARTSEASE, plant cuttings; trim old. HENGES, clip, e; it is the best time. MIGNONETTE, sow in pots, to shelter in frames. ROOTED PIPINGS, of pinks, &c., plant out for blooming. PLANTING EVERGREENS, generally, commence, e. POLYANTHUSES, plant. RANUNCULUSES, plant, best, e.; sow, b. DOUBLE ROCKETS, divide and transplant. ROSES, cut down, which must be removed at Michaelmas, ten days before taking up. SEEDLINGS, plant out. SEEDS, gather as ripe, and keep down seed-pods in flower-beds. TRANSPLANT perennials, e. TUBEROUS-ROOTED plants, transplant. TURF, lay. VERBENAS, cut the roots of favourite sorts six inches from the stem; water them, and in three weeks they may be removed safely

to be kept in pots; a few plants thus treated are better than many cuttings. WATER Annuals and other plants in dry weather. YUCCAS in, or showing for, bloom, give abundance of water to. D. BEATON.

GREENHOUSE.

AIR, give freely night and day, unless when very stormy. ANNUALS, such as *Collinsia*, *Nemophila*, *Schizanthus*, of sorts, sow towards the end of the month, for blooming in spring and early summer. BULBS, pot for early blooming, such as *Hyacinths*, *Narcissus*, *Tulips*, &c., also *Lachenalias*, *Erodiums*, &c. CAMELLIAS, still expose, but defend from heavy rains. CUTTINGS may still be made, and buddings proceeded with. CINERARIAS, sow for late blooming; prick off seedlings for spring flowering; shift into flower-pots for winter flowering. CALCEOLARIAS, sow seed; propagate by cuttings under hand-lights, and shift small plants already struck; shrubby kinds for the flower-garden will be time enough after the middle of the month. ERICAS and AZALEAS, get under shelter, ready to be housed by the end of the month. GERANIUMS, MYRTLES, SALVIAS, &c., propagate by cuttings, shift into larger pots, to be established before winter, and prepare for taking up out of the open border by cutting round the roots, doing only one half at a time. Where there is not plenty of room, cuttings struck early will answer better than old plants taken up, and will also save much labour. GLASS, FLUES &c., clean and repair. PLANTS, clean, tie, arrange. POTS, free from moss and filth, and fresh surface with suitable compost. In using new pots for hard-wooded plants, let them all be soaked, and then dried, before using. SEEDLINGS of all kinds, prick out as soon as they can be handled. PROPAGATE all half-hardy things, such as *Geraniums*, *Fuchsias*, *Salvias*, and especially *Calceolarias*, *Petunias*, *Verbenas*, &c.; the last three-named will do better than if struck earlier, the smallest pieces will do best. They may either be planted in light sandy compost, in pots or in a bed on a shady border; if on a north aspect, no shading will be required. WATER will still be abundantly required for plants growing freely, and those intended to bloom in winter, such as *Primroses*, *Cinerarias*, and *Chrysanthemums*, should have manure-water given freely. Whenever you observe the first flower-bud of a *Chrysanthemum*, though no larger than a pin's head, you may give the clear manure-water freely. Water should be given sparingly to plants that are to be put into a state of rest, just keeping them from flagging. All SUCCULENTS will now do better next season the less water they receive, provided their stems are not rendered very limp and soft. TROPICOLUMS, with tuberous roots, pot whenever they begin to vegetate; they do not like shifting, therefore give a good-sized pot at once; give very little water until the pot is getting filled with roots, as they cannot bear sour sodden soil; let the pots be well drained. CLIMBERS will soon require cutting that have been growing rather naturally, in order that more light may be given to the plants below. If the house plants can be kept out of the house for a month longer, the creepers, to be beautiful, will require ample waterings.

R. FISH.

ORCHID HOUSE.

AIR, give only on bright sunny days, from 10 o'clock till 3. BLOCKS, continue to syringe morning and evening, the first half of the month; the latter end in the mornings only. BASKETS may be kept rather drier, excepting such as *Stanhopeas* that are growing; let these be dipped in tepid water once a-week, at least, using discretion, according to the state they are in as to being wet or dry. DENDROBIUMS: many species will now have perfected their pseudo-bulbs for the season; let such be immediately removed into a cooler house, and have no water given them. Other kinds will require the same treatment as soon as the full growth is attained. GROWING PLANTS may still be retained in the warm, moist atmosphere of the orchid-house, and be kept moist at the roots. HEAT in this month may be reduced a few degrees. Sudden changes are always dangerous; by gradually reducing the heat, the plants become inured to the change. INSECTS, search for diligently, and destroy; every one destroyed now will prevent myriads from being bred next year. *LÆLIA AUTUMNALIS* will be growing rapidly; keep it well supplied with water, as, upon the strength it acquires during this month, will depend the number of flowers on the spike in October or November. REST, give to all plants that have made their annual growth; without this they would continue to grow and never flower. SHADE may be much reduced now, except on very bright days during the beginning of the month. WATER, continue to give to growing plants till the year's growth is completed, then withhold it, excepting from a few species with pseudo-bulbs, which, not having that storehouse of food laid up, must have occasional dampings and sprinklings.

T. APPELEY.

PLANT STOVE.

AIR, give abundantly on all favourable occasions. ACHIMENES going out of bloom, place in a cold pit, giving water to induce them to go early to rest. ACHIMENES PICTA, continue to grow on, to flower at Christmas. CLIMBERS, on the rafters, commence to reduce greatly, by pruning off all superfluous shoots, tying the rest in neatly. In pots trained on trellises, these would be greatly benefited by being placed out-of-doors, in some sheltered nook, for a week or two at the commencement of this month; when set out, lay them on one side on a grass plot, and give the leaves on the under side a severe syringing. This would clear them of the red spider, at all events. FRAMES containing stove plants must now be covered up every night with double mats; uncover early, and lift up the light for a minute or two to let out foul air, and let in fresh and sweet: give these plants water only in the morning. GESNERA ZEBRINA: those started early will now be in flower; keep the rest growing by keeping up a heat of 72° or 75°, and supply water in a tepid state in due proportion. Other kinds of GESNERAS and GLOXINIAS gone out of bloom place in cool frames, and withhold water, to cause them to go gradually to rest; plants of this kind struck in the spring will now be in flower; keep them in the stove, and give water. PLANTS, generally, that have bloomed, give less water and heat to. WINTER-BLOOMING PLANTS, give every encouragement to, to cause a fine bloom. SOILS, procure and prepare for use by frequently turning them over; keep them clear of weeds at all times.

T. APPELEY.

FLORISTS' FLOWERS.

ANEMONES, plant in rich light soil. AURICULAS and POLYANTHUSES, remove towards the end of the month into winter shelter; take the opportunity to cleanse and top-dress slightly. CARNATIONS and PICOTÉES, take off layers, and pot them in pairs in four-and-a-half inch pots; such layers as have not rooted, pot, and place in a frame, kept close, till they root. CHRYSANTHEMUMS, give liquid-manure to; place in the greenhouse a few that show bloom, to flower early; protect from early frosts, should any occur. CINERARIAS, pot, and advance a stage. DANLIAS, continue to protect the blooms from sun, rain, and insects; keep them well tied in, to prevent the autumnal winds from breaking off the side shoots. FUCHSIAS, in pots, gone out of bloom, remove out of the greenhouse, and place in a situation where severe frost will not reach them; under a stage in the greenhouse, or in a cold pit, will do. IRIS (bulbous), plant latter end of the month, in rich borders or beds. LAYERS, of Carnations, Pansies, and Pinks, take off as soon as rooted and pot. PINKS, prepare the bed or beds to plant out layers in; mix freely the soil with well-decomposed littery dung and leaf-mould, plant the pipings or young plants out towards the end of the month. RANUNCULUSES, if not all taken up must be done instantly, or the autumn rains will start them into growth prematurely; examine roots of, taken up previously, and if mouldy lay them in the sun to dry more effectually. ROSES cut off all decayed blooms as they occur. TULIP-BED, prepare, by adding dung to the soil, if not exhausted, or by making an entire new bed; see that it is well drained, and place two inches of cow-dung over the drainage.

T. APPELEY.

KITCHEN-GARDEN.

ANGELICA, thin out, and earth-stir in the seed-bed, where the plants may remain until the spring. AROMATIC POT HERBS, finish gathering. ARTICHOKEs, break down stems, and keep clear of weeds. ASPARAGUS-BEDS, weed. BALM, cut, and dry. BEANS, keep clear of weeds, and seed collect, and dry off well; store them away in the pods. BEET, take up as wanted. BORAGE, earth-stir amongst, and collect seed. BROCCOLI, plant out, and use the hoe freely amongst. BROCOLI, plant, and keep the earth stirred in fine dry days. BURNET, plant. CABBAGES, plant out; keep the seed-beds free from weeds, and earth-stir. *Red Dutch Cabbages* are ready for pickling. CARDOONS, earth up well in dry weather. CARROTS, attend to thinning and earth-stirring the August sown crops. CAULIFLOWER PLANTS, prick out in rich, open, warm borders, so as to have a good choice of plants to stand the winter. CELERY, earth-up freely in dry weather; let the earth be well forked-up and broken to pieces previously to spading it up to the rows, and plant out successional crops which will be found very useful to the cook during the winter and spring months. CHERVIL, sow. COLEWORTS, plant out. CORIANDER, sow. CORN SALAD, sow. CRESS, (American), sow and plant. CUCUMBERS, attend to in pits and frames, top and clear away all decayed leaves, &c.; strike cuttings of favourite kinds, or sow seeds for winter and spring growth. ENDIVE, plant out plentifully; tie up, or otherwise cover up to blanch. FENNEL, plant and cut down. HOING, attend to in all cases in dry weather, and be the more attentive to this between heavy showers. HYSSOP, plant. JERUSALEM ARTICHOKEs, keep clear of weeds; do not injure the stems; take up roots if required for use. KIDNEY-BEANS, earth-stir among, and collect seeds; put away dry in pods. LEEKS, plant and earth-stir. LETTUCES may still be sown in warm borders, but attend to those which were sown at proper time; prick out from the seed-beds; keep them clear from weeds, so as to have a good winter supply of sturdy plants; tie up full grown. MELONS, be sparing with water at this season; give plenty of air to ripening fruit; keep up warmth by backing up with linings, &c.; shut up early. MINT, still cut and dry. MUSHROOM SPAWN, collect; this is often found when breaking up old hotbeds; put it away in close dry sheds until wanted. MUSHROOM-BEDS, make; this is the best season in the whole year for making mushroom-beds in any way, from the proper mushroom-house to the common span-roof bed in the open air to be covered with straw. NASTURTIUMS, gather as they become fit for use. ONIONS, press down to promote their bulbing, and take up those that are ripe; dry well before storing away for winter; attend to the August-sown; weed and earth-stir. POTATOES, take up and store away, and should be looked over shortly and often, after being taken in until all the diseased ones are removed. PARSLEY, cut down and transplant in some warm corner for winter supply. PEAS, look after birds, and collect seed of, dry them well, and store them away in their pods. PENNYROYAL, cut and dry. MARJORUM, the same. RADISHES, sow in warm borders. RHUBARB, clear from weeds. SAGE AND SAVORY may be planted. SAVOYS, plant and earth-stir. SEAKALE-BEDS, keep clear from weeds. SEEDS, gather of all kinds as they ripen. SMALL SALADING, sow. SORREL, plant. SPINACH, sow in warm border; attend to thinning-out the August-sown crops from six to eight inches apart in the rows. TANSY and TARRAGON, attend to if required. THYME, plant. TURNIPS, sow of the best little early kinds; thin and hoe advancing crops. WATERCRESS, plant. WATERING, in dry weather, must be particularly attended to previous to planting, or pricking out any kind of young plants, or sowing the same. Water well both before and after. ATTEND to earthing-up, earth-stirring, and hoeing in general, in dry weather; the rake may be advantageously used in many cases after the hoe at this catching season of the year. Many good managers only plant CABBAGES in one week of the whole year, and that in the first week in September, and from plants sown about the 21st of July; the soil to receive them should be made thoroughly rich. Others make a good planting at this time, and another in March, which will give an excellent supply for the whole year.

T. WEAVER.

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WEEKLY CALENDAR.

M D	W D	SEPTEMBER 1—7, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
1	Th	Purple Bar ; woods.	30.195—30.030	72—43	S.W.	01	15 a. 5	44 a. 6	2 m 13	27	0 11	244
2	F	Red Triangle ; hedges.	30.261—30.220	77—45	S.W.	—	16	43	3 27	28	0 30	245
3	S	Mottled Grey ; mossy trees.	30.187—30.121	76—49	E.	—	17	41	sets.	☺	0 49	246
4	SUN	15 SUNDAY AFTER TRINITY.	30.093—30.024	75—51	E.	—	19	39	7 a 30	1	1 9	247
5	M	Small Heath ; commons.	29.990—29.935	73—50	S.	02	21	37	7 47	2	1 28	248
6	Tu	Oak Eggar ; woods.	29.970—29.938	69—50	N.	32	22	34	8 6	3	1 48	249
7	W	Pale Prominent ; willows.	29.929—29.918	69—55	W.	48	24	32	8 25	4	2 8	250

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 70.1° and 48.2° respectively. The greatest

heat, 85°, occurred on the 1st in 1843 ; and the lowest cold, 30°, on the 6th in 1850. During the period 100 days were fine, and on 82 rain fell.

THE FOREST TREES OF BRITAIN.—No. 3.



DR. JOHNSON'S WILLOW.

THE above engraving represents what remained in the year 1822 of a magnificent Willow-tree, long famous in the Midland Counties, where it was known as *Dr. Johnson's Willow*. It is engraved from a Sketch which was made by Mr. Westwood, when a schoolboy, and is taken from the south-west. The artist has unfortunately given far too drooping a character to the foliage. It appears to have belonged to the species which has been named *Salix Russelliana*, by Smith (*Fl. Br.* p. 1045.) It grew close to the city of Lichfield, by the side of the foot-path, half-way between the Cathedral and Stow

Church, and was traditionally believed to have been planted by Dr. Johnson's father. It was, certainly, a favourite tree of Dr. Johnson himself ; and, to use his own expression, "it was the delight of his early and waning life." He never visited Lichfield without paying it a visit, resting under its shade, when on his way to visit the celebrated "Molly Ashton," who resided at Stow Hill, adjoining Stow Church.

At the request of Dr. Johnson, Dr. Trevor Jones, a physician of Lichfield, drew up an account of the tree in 1781, at which time the trunk rose to the height of

12 feet $8\frac{1}{2}$ inches, and then divided into fifteen large, ascending branches, which, in very numerous and crowded subdivisions, spreads at the top in a circular form, not unlike the appearance of a shady oak, inclining a little towards the east. The circumference of the trunk, at the bottom, was 15 feet $9\frac{1}{2}$ inches; in the middle, 11 feet 10 inches; and at the top, immediately below the branches, 13 feet. The entire height of the tree was 49 feet, and the circumference of the branches, at their extremities, upwards of 200 feet—overshading a plane not far short of 4000 feet. The most moderate computation of its age was, at that time, near four score years (this would bring the date of its being planted to the year 1700—Johnson was born 1709). Several views of this fine tree have been already published. There are two portraits of it in the *Gardener's Magazine* for 1785. These were taken before the tree had arrived at its full growth; for, in 1810, Dr. Withering measured the tree, and found the trunk to girth 21 feet, at 6 feet from the ground; and to extend 20 feet in height, before dividing into enormous ramifications; the trunk and branches were then perfectly round; but, in November in that year, a violent storm swept away many of the branches; and nearly half of what remained fell to the ground in August, 1815. At the time of Mr. Westwood's acquaintance with it, about 1822, it exhibited the appearance given in the above woodcut—the trunk being hollow, having a deep rent on the south-west side (shewn in the cut); and a far greater hole in the east side, into which boys used often to creep; in fact, in 1825, the trunk was much burnt, by some urchins who had made a fire in the interior, but the town fire-engine having been brought into requisition the flames were subdued; but, in April, 1829, the tree was blown down in a violent storm. A lithograph sketch of its appearance shortly before its fall was published, which has been copied in Loudon's *Arboretum*, iii. p. 1521, in which work we further read, that, after the tree was blown down, Mr. Holmes, a coach-maker, residing in Lichfield, and the proprietor of the ground on which Johnson's Willow stood, regretting that there was no young tree to plant in its stead, recollected that the year before a large branch had been blown down, part of which had been used as pea-sticks in his garden; and examined them, to see if any of them had taken root. Finding that one had, he had it removed to the site of the old tree, and planted there in fresh soil; a band of music, and a number of persons attending its removal, and a dinner afterwards being given, by Mr. Holmes, to his friends and the admirers of Johnson. The young tree is now thriving.

At the time of its fall, Johnson's Willow was estimated to be of the age of 130 years, and its greatest height appears to have been about sixty feet. After it was blown down, some of Johnson's admirers, at Lichfield, had its remains converted into snuff-boxes and similar articles.

There is a circumstance connected with this tree

which bears strongly upon its connexion with Dr. Johnson, that it seems surprising that none of Dr. Johnson's biographers should have mentioned it. The little cottage shewn in our engraving (shorn, indeed, of its fair proportions by the artist, who has also omitted the row of windows beneath the arched eaves in the thatched roof) is called "the Parchment House," or Cottage. It is now converted into two dwellings.

Now, it happens, that Johnson's father, who was a bookseller at Lichfield, engaged unsuccessfully in the manufacture of parchment, and it was in this cottage, doubtless, that the manufacture was carried on up to at least 1725, at which time Dr. Johnson was sixteen years old. It was in this year that the father was proceeded against by the Excise Office for duties levied on the parchment, and it is this circumstance that led Johnson, in his Dictionary, to give so violent a definition of the word *Excise*, namely, "a hateful tax, levied upon commodities, and adjudged not by the common judges of property, but by wretches hired by those to whom excise is paid." See further, *Boswell's Life of Johnson*, by Croker, l. p. 31, note.

From the close proximity of the tree to the "Parchment" Cottage, we can easily conceive that Johnson's interest was excited long before it became famous on account of its size, for, if not planted before 1700, it would then have possessed no interest on that account, whereas, if it had been planted either by the father (who was born in 1656, and who certainly was a resident at Lichfield in 1687), or by the son, or had attracted the attention of the latter when a boy, from living close to the spot, we can easily understand his statement, that "it was the delight both of his early and waning life;" and, in fact, since the above lines were written, an aged relation, who was well acquainted with the late Rev. H. White, the clergyman of Stow Church, and the friend and great admirer of Johnson, has stated that she was told by Mrs. White, that the twig, which grew to be Johnson's tree, was struck into the ground by Johnson himself. Supposing this to have been done when he was a lad of ten years old, the tree was not more than 105 years old at the time of its destruction, which gives us 100 years as the ordinary duration of a tree of this kind.

A botanical friend writes to us thus—"I have certainly met with several Willows of larger dimensions than Dr. Johnson's tree. There is a large Willow close to Stratford, which, I think, might well be dedicated to Shakspeare, since it is the only tree of any magnitude I could find near Stratford. There was also a Willow of some size, a dozen years since, in the grounds where Mrs. Thrale lived (Johnson's friend), somewhere near London (at Streatham), but whether in existence now, I cannot say. I remember that Blyth, who is now curator to the R. A. S., at Calcutta, took me to it." As Johnson was constantly at Mrs. Thrale's house, the Streatham tree may have been planted by Johnson himself, from a cutting of his Lichfield tree.—I. O. W.

"WHAT kind of poultry do you really advise me to keep?" This question has been so frequently heard of late, that the reasons on which an answer may be given will, probably, interest many of the readers of THE COTTAGE GARDENER.

First, however, let us distinctly understand the class of persons to whom the following observations may be applicable.

Now, with those that breed fowls for exhibition we have nothing to do in the present instance, which regards simply the value, in an economical point of view, of the several breeds of our domestic poultry; for though at present limiting our remarks to "fowls" only, properly so called, it may be advisable, on another occasion, to refer to geese, ducks, and the other ordinary members of the poultry-yard.

On the supposition, therefore, that the enquirer is of the class of those country gentlemen, or clergymen, to whom the pages of THE COTTAGE GARDENER are so especially dedicated, and that some few acres of land are occupied by him, with the view of supplying his household with milk, butter, pork, or corn, as the case may be, we shall now proceed to explain our opinions as to the choice and management of his poultry. This arrangement, it will be seen, at once excludes the farmer and the cottager, whose object may probably be better served on a different plan.

The occupier of some fifteen or twenty acres of land under the usual course of farming has many advantages in the small corn and the steamed food prepared for his cattle and pigs, both of which contribute to lessen the expense of the keep of poultry from the amount that it must reach when every article of their food has to be purchased. More, probably, may thus be made of what is so bestowed than is attainable by sale, or any other purpose for which it is commonly employed. Under ordinary circumstances, indeed, we strongly recommend the adoption of a system, on such occupations, that may provide whatever is required for household wants rather than growing or rearing for sale. Such occupants of land are not in the habit of attending markets, and, consequently, all such transactions must pass through the medium of a third person, whose interest, to say the least, is not identical with his employer's. In poultry, no less than the other live and dead stock of a farm, however small, will attention to this fact be found prudent.

Persons thus circumstanced will require a "continuous" supply of both eggs and poultry throughout the year, and not, as too often happens, to find themselves with abundance one month, and scarcity the next. Taking the numbers of the family from ten to twelve, servants and children included—and eggs are often good economy elsewhere than at your own table—from twelve to fifteen hens should give a constant supply throughout the year; and if, in the winter months, there is too heavy a run on that branch of the products of the poultry-house, the eggs that in summer have been stored in lime, or placed in a barrel with salt, will provide what may be required for pastry, and

similar purposes. But, at the risk of the penalties of digression, let us here suggest the prohibition of eggs to the cook when employed on a rice pudding; their presence renders it too hard and dry, while their absence leaves it, if the work of a competent *artiste*, exactly of that consistency that finds favour with most palates.

But the cart is now before the horse, since a recommendation is given when to use eggs before their production has been seen to. Now, of those twelve to fifteen hens above-mentioned, one-half should be *Dorkings*, the remainder *Shanghaes*. In this selection, we have regard to the incubation no less than the mere production of eggs. During summer, both varieties will contribute jointly to the egg-basket; and when, later in the year, the Dorkings fall off, the Shanghaes will be at hand, and fully justify their great merits as winter layers. Early in the spring, the Dorkings only should be employed as mothers, remaining, as they do, so much longer with their chickens; but from April, the Shanghaes may safely be entrusted with the responsibilities of maternity. The older hens of both varieties will be at their worst time as egg-producers during Autumn and their moulting season; early-hatched pullets, therefore, especially Shanghaes, must then be ready to take their place. And thus, with a little forethought and anticipation of what may be necessary, the eggs need never be wanting.

But persons, situated as those by whom we have presumed the question that heads this paper has been put, require "*good chickens*" no less than fresh eggs: this leads to the consideration of what male birds should be the companions of the before-mentioned hens.

In such establishments we have no reason to expect enclosed yards for separate birds; such arrangements carrying us out of our proper limits, and introducing us, probably, to those who regard their fowls as special pets and favourites, with a possible view to an occasional exhibition.

We reckon, however, on a good, airy, clean, poultry-house, and the run of a meadow, with a careful provision of fresh water.

The hens being of two separate breeds, the cocks—for we would have two—should belong to one or other of those breeds. Which, then, shall we take? To Dorkings, we think, must the preference be given; or those who trust to our advice may not be so fully satisfied with the chickens that appear on their dining-tables.

"A reluctant confession, at last, in favour of Dorkings *versus* Shanghaes," is an exclamation that, doubtless, will be here raised by some reader mindful of former papers in THE COTTAGE GARDENER. No; we decidedly reply. What we then said, still continues our opinion, and this is it—that a heavier weight of poultry may be raised within a given time, and on a certain quantity of food, from Shanghaes, than from fowls of any other breed. In "quality," we repeat our former admission, that they may be exceeded by others, especially by Game and Dorkings. But a "young" Shanghae—for a cockerel of that race, destined for the kitchen, should never live beyond five, nor a pullet beyond six, months—

is of fair average quality as compared with nine-tenths of the fowls procurable at country markets. The fault, indeed, is in the fact, that they produce meat on inferior parts; thus; the breast is too often prominent, while the leg is unusually developed; the latter, however, is by no means so apt to prove tough as in other fowls. The limit above referred to must, however, be kept in view, or our advocacy falls to the ground.

But let us here anticipate another objection that may be taken to this advice—"You say that such persons as you now refer to will, probably, be willing to pay something extra for the superior character of his poultry, from having them bred by Dorking rather than Shanghae cocks; why, therefore, do you not recommend that the male birds should be of the '*Game*' family, as you have placed these birds at the head of the list for culinary excellence, and term the Dorkings constitutionally delicate?" To those whose experience has rendered them familiar with Game fowls the answer may seem unnecessary, but they form but a small portion of those into whose hands this paper may fall; we reply, therefore, that in localities such as we have now described, Game fowls would be too troublesome, and thus, not merely the male birds, but as to avoid the production of mongrels only we should have to substitute Game hens for those of the Dorking breed, these latter would never consent to be at peace with themselves or their neighbours; they cannot, in fact, be kept in large numbers; and though an old Game cock will certainly preserve a certain degree of order in his walk, there will still exist so jealous a feeling, that combats, to the detriment of old and young alike, will ever be recurring. A well-fed Game chicken is, unquestionably, the best of all poultry, but, then, although when allowed a wide range, and kept in small numbers, their constant activity procures so large a quantity of their food without cost to their owner, they attain no great size; and without such advantages in their run, the calculation of comparative "cost and produce" would finally be against them. No; however suitable in some cases for "farm" stock, they are not calculated for the economical production of eggs and chickens under the circumstances that are now before us.

But, says the objector, all this may be very true, and the Game fowl may be unsuitable for the wants of those who have solicited your advice, but still, since you declare the Dorking to be a delicate bird, why not then take some other breed? For the sound reason, that we do not yet know where to lay our hand on a better bird for our purpose. This year has, certainly, been unusually destructive to them, and north, south, east, and west, wherever, indeed, curiosity on poultry matters has led us, do we hear the reiteration of the same complaints. Fowls, indeed, of all kinds, have suffered from the low temperature and continued wet of this summer, and Shanghaes have evinced their hardy nature by sustaining these trials with far less mortality than other races; but such conditions as to weather are exceptions to the general course of the seasons, and it cannot be supposed that it could have been found profitable to rear Dor-

kings for the London, and other markets, throughout the long period that it has been done, if, on the average, they had proved so commonly deficient in vigour of constitution as would be indicated by the recent records of so many yards throughout the whole of the United Kingdom. We may even allow the Dorking race to be somewhat deficient in constitutional strength, and this we believe to be the case, but when the Dorking chicken does grow, it grows fast, lays on meat in the right place, and, after death, seldom fails, under fair treatment, of proving both tender and well-flavoured.

If their owner may wish to breed pure chickens only, the eggs of the Dorkings only may be taken for the purposes of incubation, the difference of colour proving a sure means of distinction. If, again, on the other hand, it may be desired to test the merits of the half-bred race, there is great encouragement in the large-sized, useful fowls that have been lately exhibited as the produce of a similar union. Hitherto, the members of the different families of fowls, of pure descent and unstained lineage, have appeared to us as best calculated for the several purposes of poultry-keepers, but these experiments on crossing the different races, even if they fail to guide us to any improved composite race, may still serve to confirm the merits of the several distinct varieties.

"Where should we get our birds to start with?" may now be asked. In respect of Dorkings, wherever obtained, we should certainly advise as near an approach as possible to the character of Captain Hornby's birds, their excellence, in an economical point of view, being equal to the beauty of their appearance. In Shanghaes, as no exhibition display is intended, a purchase may easily be effected at small cost; for there are few yards where, at this season, pullets of indifferent feather, but, in other respects, possessing all the good qualities of their family, may not be obtained at a very reasonable rate.

It will be necessary to provide yearly a supply of pullets equal to one-third of the whole number of hens, to supply casualties, and replace those that are become too aged for profit. The Dorkings may be reared, supposing that every second year a cock of fresh blood is introduced; and an annual purchase of a nest of Shanghae eggs would supply the requisite number of those birds. For management, &c., reference may be made to the pages of *THE POULTRY BOOK*.

Many points, we are aware, have been very cursorily glanced at in these observations, and very many matters which would materially influence the success of the exhibitor have met with comparatively little attention. All that we had in view was how to recommend a plan by which the query that caused these notes may best be answered—that is, how an individual, in the circumstances that we have pre-supposed, may most economically provide his household with eggs and chickens.

—W.

No duty presses more imperatively upon a public journalist than the exposure of frauds; and, however unpalatable the duty may be, it is one from which we have not, and will not shrink. Two cases of deception have recently been brought to our notice in poultry transactions, and we lose no time in recording them as warnings to our readers.

The prevailing taste dictates that those buff Shanghai pullets are to be preferred which have no black feathers in their hackle. One was bought recently in which no such black marks appeared, but, after being kept a short time, some spots began to peep forth. Upon a closer examination, it was then found that many of the objectionable feathers had been plucked away, and that the black points of others had been ingeniously removed. The scissors had been employed in this instance; but we are told that in some other cases the blackness had been removed, or mellowed down, by the gentle but repeated use of the pumice stone.

The next instance of fraudulent deception was in the case of a Spanish cockerel. His white face was unusually large and well-developed for so young a bird; indeed, so much so, that a good judge of this breed of fowls gave for him a large price. Since the purchase, it is discovered that the bird's cheeks had been shaved and painted white!

We know dishonesty is so prevalent among horse-dealers, that any fraudulent iniquity among them is considered customary and unexceptionable; indeed, we know of an old horse that was so metamorphosed by one of the profession, that its former proprietor bought it as a young horse a few months after selling it. Such deceptions, we hope, will not prevail among poultry fanciers; but we fear that the only safeguard is vigilance on the part of the purchaser. He must not only be vigilant in examining birds before buying them, but he should be well acquainted with the character of their vendors. Sorry are we to have the conviction forced upon us, that there are among these some from whom we are entitled to expect purer conduct than evidence now before us permits us to think really characterizes them.

THE PLANTING SEASON.

WE are now approaching that period of the year when most good and experienced planters like best to carry out planting operations; more especially of large evergreens. A few years since, the questions of autumn and spring-planting were much mooted, and, at the commencement of these debates, the advocates on either side seemed to be nearly equal; since then, however, there can be little doubt that a vast number of the spring planters have either come over to the supporters of the autumn side of the question, or have ceased to press their own views.

For my own part, I confess to a decided prepossession in favour of autumn-planting; I cannot remember the time when I could feel a bias in favour of the operation in spring. I have been in the habit of removing trees and shrubs annually for some thirty years, at least, and, therefore, must lay claim to a fair share of experience; and having moved them at various periods, the spring,

generally only as a matter of necessity, I have been able to mark the various degrees of success.

In order to understand the true bearing of this question, it may be well to chat over the atmospheric conditions prevalent at the respective periods of autumn and spring; to examine what the probabilities are, and what the conditions most suitable to the planter; after this, I will take the liberty of pointing to a few important practical facts.

One feature, of no small consequence in autumn-planting, presents itself on the very face of the subject; and although not involving, by itself, any great principle connected with the well-being of the tree, is worth placing in relief—it is the economical bearing of the matter. If I can show that the chances are in favour of autumn-planting, I can also show that such recommendation comes with double force in the eyes of practical men; and to hint that the out-door demands on labour is by far greater in the month of March than in September or October, is to point to a mere truism. Perhaps this may be thought to account for the predilection our old practicals have, in the main, for getting such work ahead.

But now to the arguments in favour of autumn-planting, or rather to the pros and cons in the affair; for we must look both sides full in the face. What, then, are the conditions most favourable to the speedy rooting of a shrub or tree, be the period of the year what it may? First, bottom warmth, equal to keeping up the vital or active forces of the tree; and not only that, but one superior, by a few degrees in the average, to the heat of the surrounding air. Secondly, a rather moist condition of the atmosphere, if not for the purposes of absorption, at least, in order to act as a check on the perspiratory organs of the suffering tree, which is now in a condition ill qualified to afford the copious perspirations of established trees. And, thirdly, a steady ground moisture, to which may be added, the absence, as far as possible, of drying winds.

Any one who will take into consideration, fully, the respective characters of the autumn months and those of the spring, will at once see the vast superiority of the former as to planting. That the desirable conditions enumerated are correct, in the main, our first-rate gardeners will, I am persuaded, bear a ready witness. Men who have been familiar with the art of propagation by cuttings, &c., for many years, both in a scientific and practical point of view, are, it must be admitted, in a good position to ascertain the value of such considerations. It may appear strange to some to talk of propagation by cuttings, as bearing on the subject of transplantation; but, probably, a familiarity with such gardening necessities is better calculated to create a correct judgment as to planting matters than most gardening processes.

The argument concerning the great utility of ground-heat, has been, in my opinion, too much neglected in this question. Mere novices in horticulture, would, perhaps, wonder at a practical for making a fuss about some four or five degrees of ground-heat, when the subject to be planted is nothing but a huge Holly or Laurel. But such should learn, that it is with Hollies or Laurels, as with Turnips and Cabbages. He is the best planter who can, in the most speedy way, coax the tree or plant to become familiar with its new locality.

Now, it is quite clear that September and October possess considerable advantages, in this respect, over February and March, or, indeed, any intermediate month. It is perfectly superfluous to go over arguments to prove this; and I proceed on the assumption that I have made the case out.

The second consideration is about the average amount of air-moisture, taking it for granted that dryness in the air, by robbing the newly-planted tree of

juices it can ill spare, is one of the planter's greatest enemies. We are all familiar with the vast amount of humidity the air generally contains during the late autumn months. Sunshine, moreover, is a scarce article; and I need scarcely add, that sunlight is of no utility to newly-planted trees, but, rather, the reverse. It will be evident, then, that the chances are much in favour of the declining autumn months as to air-moisture, or, at least, there is less dissipation.

The next consideration urged, is a steady or permanent ground-moisture, the necessity of which, to new planting, is obvious to the most uninformed reader. I think it will be found that betimes in September, and generally in "old October," rain falls pretty liberally, in other words, we are not accustomed to expatiate on droughts after the middle of September has fairly passed. But who has not heard of "March dust?" Not that it is an annual affair, however; but when it does occur, which is sufficiently frequent to gain it a time-honoured name amongst farmers, it is dust in earnest.

I think that little more need be said, on the present occasion, to prove the advantages, on the average, of autumn-planting over that of the spring; and I will proceed to handle a few points of a merely practical character, which should be well thought over by young planters. In the first place, What about balls of earth? I am persuaded, from experience, that too much fuss by half is made about the ball. I do not deny that a certain amount of it is not only beneficial, but really necessary, under certain circumstances; but, it may be remembered, that such is too often obtained at the cost of hundreds of valuable fibres. A ball, too, loses half its importance in October planting; whilst in spring, the planter having the fear of March winds and sunshine in his eye, feels that under the heavy demand that will be made on the foliage during such weather, the tree will need some instant resources to fall back on. My advice is, do not sacrifice your fibres for the sake of the ball; get a moderate share if you can, but be sure to take care of the fibrous roots. Great care should be taken to avoid galling the roots; many a good tree is thus spoiled in the act of removal; the bipeds, called planters, may do more harm by half than the sun and wind.

Some people are very fond of planting on a rainy day: this is not such sound doctrine as it would, at first sight, appear. In the first place, no operation connected with the soil can be carried out so well when the soil is wet as when it is sound; and secondly, it is ten to one your men are secretly displeased, and an under current of ill-feeling not unfrequently mars important processes. Besides, what does a wet day for the fibres any more than can be done by a water-pot? Some good-natured persons hold a fancy that the tree will "get hold" directly if planted on a showery day—everything looks so green and exuberant. But this is preposterous as applied to shrubs or trees; be the day as it will, many days must elapse before the disturbed fibres can resume their functions. In these operations it is by far the best plan to station one man at the water-pot—not to move on any account, and then—with a syringe almost constantly at work, he can keep a constant dew on all naked portions of the roots. Our uninformed readers may rest assured that there will be no need of rain if this be done; and as to the expense, why, if the tree is of any consequence, hesitate not on this point. Who would risk losing a valuable Holly, of ten or twelve feet in height, for the sake of a man's labour for three or four hours?

We have heard much about "puddling," from some quarters. Now, I do not altogether condemn the practice, for it is sometimes of benefit; but it is by no means of general application. Puddling is sometimes of benefit where the planter's ground is coarse, and not

over moist; inasmuch, as cases arise where it is difficult to get the interstices of the soil filled in; but where the soil is made friable, as it ought to be by manual labour previous, no puddling for me. It is, however, a very good plan to apply a good flooding of water when the soil is only half filled in, so that every crevice may be filled, and then to leave the upper portion of the soil rather loose, unless dry, when another good watering should be given.

About the mode of filling in the soil, one remark is here necessary—the filling in trees or shrubs with and without balls. It is just so with the repotting of plants; the two processes have many points of agreement. If a gardener is shifting a hard-wooded plant, say a Camellia, which has a firm ball, he will not leave the soil loose round the ball, but press it close, if not tight, in the act of filling. If, however, the subject were a Geranium, which had been disrooted, and all the soil shaken away, he would pot in a very different way—very little pressing needed here. The reasons are obvious. If the Camellia with a ball were treated as the Geranium, the subsequent waterings would only saturate the new soil, whilst the ball within would be dry as dust, and the plant would be starving in the midst of plenty. And thus have hundreds of pot plants perished, and thence so many queries about such mishaps. Wherever there is a ball, and that tolerably firm, press the filling in, I say, firmly; and this is one reason for my preferring a mellow state of soil to one that is wet—mellow soil will bear the foot, wet soil not so; it would, indeed, be "puddling."

Good planters exercise a prudent forethought wherever circumstances require it, and such can be met by the amount of labour. If they have a harsh, lumpy, or adhesive soil to deal with, means must be taken to pulverise at least as much soil as will be requisite to fill up the interstices betwixt the fibres; and, of course, the holes are excavated beforehand. In many cases, in which the plant or tree is of much importance, and where it is necessary to carry speedy effect, the experienced planter will have some superior soil adapted to the tree in question provided from the compost yard, where all the refuse of the potting bench and surplus mixtures should ever be preserved for such purposes.

Lastly, as of great importance to large specimens, I would urge the propriety, on all sound soils, of forming what is termed a basin over the surface of the newly-planted tree's roots. I am aware, that in dress-ground this is somewhat averse to smartness of appearance, but the latter ought to concede half-a-point in so material an affair. It often happens, that a large evergreen, although planted in October, and well rooted during the same autumn, will require liberal waterings in the following May, in order to prevent leaf-shedding. In such cases, it is best to give a score of large water-cans full at a watering: dribbling is of little use here. How convenient, then, is it to have a capacious basin to retain and equalise the water, as also to conduct rains to the roots at all times.

Those who have quantities of very small shrubs or evergreens to transplant, will find it a good plan to make a clayey puddle on the spot where they are removed from, and dip their roots in before placing them in the cart or other vehicle which is to convey them to the planter. In this county, I have seen Hollies tied in bunches, and thrown on the top of coal or other carts, without the least precautions, and after travelling half a score of miles in a March wind, planted as hedges, or otherwise; and after nine-tenths failing, the farmers gravely asking the gardener, how it was they could not grow Hollies. If the planter can choose his day, by all means let him avoid a sunny one with a drying wind.

R. ERRINGTON.

ROCK-PLANTS.

I HAVE been pushed up into a corner for a long while, but hitherto I have been able to hold out against writing bare lists of plants without some descriptions, however short; but, late last evening, I have been thrust right over the hedge, I had adopted, by a strong-headed Irishman, from Waterford, who signs himself "X. Y. Z.," and who must have, not only "a list of such plants as are most applicable for outside rock-work," but also "the names of such rock-plants as may be raised from seeds." To this I replied, on the instant, "That is Waterford all over, anyhow, for all the rock-plants in the world can be raised from seeds, if you can get them!" He laughed right out, and his broad humour made me laugh too; although I was little in the humour of laughing at the time, seeing that I lost my footing and my steadiness of purpose at the same push. However, the upshot of the thing was, that I consented, at last, to give the two lists—one of rock-plants, and one of the rock-plants of which seeds can be procured in London—upon the understanding, that I must not have blame, nor any charge whatever, about whether all the plants and seeds, or any of them, would suit him or not.

I have taken the list of rock-plants chiefly from the newest catalogues within my reach, and the list of seeds of rock-plants I took from Mr. Carter's catalogue.

In making my selection, I have presumed that no one in his senses would make a rock-work where the roots of large trees or shrubs could reach them; that the rock-work was rather intended for the cultivation of choice plants, either as botanical rarities, or delicate alpinists, requiring special treatment; or as showy dwarf plants, or plants that hold on a long time in flower, or keep green most parts of the year. I could make a narrow border by the side of a high terrace-walk, or by a low wall or bank, in which all rock-plants whatsoever could be as easily grown as on a made rock-work for the purpose; and there is not one single plant that I know of which would grow out with us in a mixed border, that would not grow just as well, and often better, on a rock-work that was properly executed. Hollyhocks and Dahlias will grow on such a rock-work as well as in the best border that ever was made; but are they fit objects for rock-work? The question must be settled by individual taste. All I wish to be understood is, that when plants and seeds were distributed over the face of the earth after the Flood, there was no such a thing as a collection of plants set apart for growing specially on rocks in any part of the world. I have been as much among rocks as any gardener in the kingdom—perhaps more so. I have studied the botany of our own rocks, even to the eagle's nest and the ptarmigan's gizzard, and I can affirm, positively, that ninety-nine plants out of every hundred, which they call rock-plants, do not grow upon rocks at all in a state of nature. It is true, that some, yea, many, plants grow on rocks against their will, so to speak; they were so overwhelmed in the plains by a stronger race of plants, that they would have become extinct ages ago, were it not that birds carried their seed to the higher regions of the country, and there sowed them high and dry above the ordinary vegetation, where, in their turn, they became the strongest, and ever since they confined themselves to that locality, and kept possession of the higher grounds, whether rocks or ridges: not from choice, however, as we have just seen, and as half the world believe to this very day, but from sheer necessity, as the gardener has found out long, long ago, when they were brought down to him, where he gave them equal chances and fair play in his rich and screened borders. Other plants, again, that would clothe the bare hill-side, or the open fields, to this day, were it not for the intrusion of

a rougher state of vegetation, have been carried to the recesses of the forest by the same agency, where they struggled on for a time, until they, or their descendants, acquired the habit of seclusion, and that degree of change in constitution, which enables them now to flourish under circumstances the very opposite to those first assigned to them by nature; this, too, has been proved, over and over again, to the satisfaction of the gardener, as well as many other changes of constitution and habitation, equally at variance with his own experiments. Hence his surprise at meeting with, in the world, such a general want of a knowledge of the first elements of Natural History as would assign to every border, bank, brae, or hollow in or about the garden, a definite set of plants, purposed for such a place, and for such only, by the hand of Nature; to say nothing of his rockeries, for which nature does not seem to have provided liberally, or very specially, at the time of the general distribution; and hence it is that we cannot very well violate natural laws, by planting such plants on our rock-works as please our own fancies.

There is a rock-work round the pond from which Mr. Appleby used to draw water for the Orchids, at the Pine Apple Place Nursery, when the tanks got low; and there, of an afternoon, and six days in the week, during the summer, you might see some of the ladies, from the West End, botanising after the novelties of the season, where they would be sure to find them—hardy, half-hardy, greenhouse, frame and conservative, annuals, biennials, and perennials, bulbs as well, with here and there a weedy, botanical curiosity, or a full-blown florists' flower as round as my hat, and may-be as sweet as a Clove or a Carnation. All that I have seen myself, for the last twenty years; also, I met with ladies there, who govern and control the fashions of the age, and never did I hear a single observation against that particular way of planting rock-work during the whole time. If we call that No. 1, I could go on and count to ten or twelve kinds of ways for planting such rockeries, and, as likely as not, No. 12 would be planted all over with such plants as you might hide in the palm of your hand—though, in full flower, and with names as long as would take an ordinary memory to store up in a lifetime, and with flowers so small and so curiously formed, that one would need a good eye-glass to make out the parts properly. There would be no need to get different mixtures or composts to suit the most rare and delicate plants as would be indispensable for No. 1 and No. 12. Any good, light garden soil, and a good depth of it, will do for all the plants and seeds in these lists; or, if not, I shall state the difference when I come to the particular name.

HARDY HERBACEOUS AND ALPINE PLANTS suitable for planting on a properly-made rockery.

Acorus gramineus, and variegated; *A. japonicus*.

Aconitum chinense, many varieties of.

Agrostemma coronaria, single, and double, and intermedia.

Ajuga pyramidalis, reptans, and white var.

Alchemilla sericea, alpina, and fissa; fine-leaved dwarf plants.

Alyssum deltoideum, montanum, podolicum, olympicum, saxatile, and its variegated form; all those are eminently suited for rockwork.

Anemone apennina, japonica and its cross (both swamp plants, but equally good on rockwork), *apennina*, *nemorosa*, single and double, *pulsatilla*, *thalictroides*, and *palmata*.

Antirrhinum, or Snapdragons, without end or beginning.

Aquilegia californica, *canadensis*, *formosa*, *glandulosa*, *leptoceras*, and *Skinneri*.

Arabis alpestre, *ciliata*, *collina*, *procumbens*, and *rosea*; all very dwarf rock plants, requiring good sites and better attention.

Arenaria cæspitosa, *grandiflora*, *longifolia*, *nardifolia*.

Arnica montanum.

- Artemisia rupestris*.
Aster amellus and *tenellus*.
Aubretia purpurea and *deltoides*; dwarf favourites.
Asperula odorata; one of our sweetest natives, and retains the scent after drying.
Bellis, or *Daisies*—so numerous, that one should select them when in flower. It is much to be regretted that all rubbish has been mixed up together, on the continent, to make a large collection of them, seven or eight out of the whole number being extremely pretty and interesting.
Betonica officinalis.
Campanula aggregata, *carpatica*, blue and white; *garganica*, *glomerata*, *pulla*, very dwarf; *pumila*, blue and white.
Cardamine asarifolia and *macrophylla*. All the *Cardamines* are excellent food for chickens, particularly early in the spring.
Centaurea purpurea, *montana*, and *alpina*.
Cheiranthus alpinus, *Delilianus*, *Marshallii*, *ochroleucus*, and *splendidissimus*; all of them fine and suitable.
Cineraria maritima, the frosted silver plant again; *C. Fischerii*.
Circæa alpina.
Coronilla iberica, *coronata*, *minima*, and *montana*.
Cortusa Mathioli; requires particular care.
Corydalis (Dielytra) formosa.
Cynoglossum montanum.
Dactylis glomerata, variegated; this is a very pretty, strong tuft of variegated Cocks-foot grass.
Dianthus alpinus, *Atkinsonii*, *Barkerii*, *fimbriatus*, *fulgens*, *hispanicus*, *montanus*, *mutabilis*, *petraeus*, *Napoleonis*, 5s.; *polymorphus*, *Victoria*, 2s. 6d.; and *speciosissimus*: all fine, and most suitable for rockwork. See the seed-list, also, for more of them.
Dictamnus, the purple and white *Fraxinellas*—two of the most enduring plants known to gardeners on rockwork or in a border.
Dodecatheon meadia, *elegans*, *giganteum*, *integrifolia*, and others: all these American Cowslips are far safer on rockwork, as the ground is not disturbed when they are at rest and not seen.
Draba aizoides and *hesperidifolia*; both require particular attention.
Dryas Drummondii, *integrifolia*, and *octopetala*; they should have peat, and the surface over the roots be covered with small pebbles.
Epimedium alpinum, *atroviolacea*, *diphyllum*, *grandiflorum*, *macranthum*, *rubrum*, very fine, 3s. 6d.; *violaceum* and *violaceum carnea*. The *Barrenworts* require very good light soil, notwithstanding the name.
Erpetion reniforme would do for children's rockwork; some ought to be kept in pots over the winter.
Erodium alpinum, a wild kind of *Geranium*.
Erinus alpinus, very dwarf. I once saw the top of an old wall in a blaze with it for yards together.
Eryngium alpinum, *planum*, *coruleum*, and *maritimum*.
Erythrolena conspicua; perhaps the finest of all the true thistles, only a biennial, but will ripen seeds on a rockwork as far north as Perth, perhaps as far as Dingwall; they also call it the Scarlet Mexican Thistle. We had it splendidly in a peat border in Edinburgh, in 1827; never saw it half so fine in England.
Fragraria; the variegated Strawberries, particularly the yellow one, are excellent rock plants.
Fritillaria meleagris and varieties; rich yellow bulbs that would like a life-time on rockwork.
Fumaria (Dielytra) nobilis.
Galax aphylla.
Genista tinctoria and *saxatilis*.
Gentiana asclepiadea, *alpina*, *cruciata*, *pneumonanthe*, *Caucasica*, 3s. 6d.; *cruciata*, *gelida*, *saponaria*, *septemfida*, and *verna*; with the exception of the last, they prefer the north side, where the ground is cool, and partially shaded.
Geranium argenteum, *grandiflorum*, *ibericum*, *Lambertiana*, *lancastricense*, *lividum*, *nodosum*, *olympicum*, *orientalis*, *pratense* double, *sanguineum*, and *Wallichianum*; all capital rock and block plants; they are the real true *Geraniums*.
Geum montanum, *triflorum*.
Gnaphalium arenarium and *dioicum*.
Glaux maritima.
Gypsophylla elegans and *sibirica*.
Helleborus abschasius, *atrorubens*, *fragrans*, *olympicus*, and *trifolius*; all deserving of an open, airy place, as they flower in winter, and very early in the spring, though not so gay as *niger*, the common *Christmas Rose*. I only see them in the catalogue of Henderson and Son, of the Wellington Road Nursery.
Hencheria Drummondii.
Hieraceum criophyllum, *Lawsonii*, and *pusillum*.
Hippocrepis comosa.
Hypoxis stellata and *canadensis*; bulb-like plants, that ought to be much better known.
Iberis Gibraltarica, *saxatilis*, *sempervirens*, *sempervirens variegata*, and *Tenoreana*; the first and last are liable to be cut off by a hard winter, and some of each should be kept in pots in a cold frame.
Iris; all the family will grow on rockwork.
Linaria origanifolia, *hepaticifolia*, *pilosa*, and *purpurea*.
Lotus corniculatus, the double variety.
Lychmis Bungeana, *diorca*, double white, *fulgens*, *coronata*, and *viscaria*; all of them want good rich soil, and to be often renewed by cuttings.
Lysimachia nummularia, *capitata*, *stricta*, and *verticillata*; the first a favourite with us all.
Lythrum roseum superbum; in the dampest parts behind; a fine thing.
Matricaria grandiflora.
Melittis grandiflora, *melissophylla*, and *speciosa*.
Mimulus; a collection of them where the rockwork is bordered by water.
Mitchellia repens.
Mitella diphylla and *pentandra*.
Myosotis azorica, *alpestris*, *montana*, *palustris-rosea*; the Forget-me-not family.
Nuttalia grandiflora; requires to be constantly renewed from seeds.
Oenothera acaulis, *Fraserii*, *macrocarpa*, *missouriensis*, *riparia* or *repens* or *prostrata*, *speciosa* and *taraxifolia*.
Omphalodes verna.
Ononis rotundifolia and *speciosa*.
Orobis canescens, *flaccidus*, *Gordonii*, *lobatus*, and *vernus*.
Oxalis floribunda, and *elegans*.
Phlox nivalis, *repens*, and *verna*.
Plumbago Larpentæ.
Polemonium pumilum, and *pulchellum*.
Polygonium Brunonii, and *vaccinifolium*.
Potentilla alpestris, and all the fancy ones, but they take up a good deal of room, if the soil is good, and if not, they will not answer.
Primula alpina, *altaica*, *calycina*, *ciliata*, and *cortusoides*, which requires to be often renewed by seed; *decora*, *denticulata*, *farinosa*, *glaucescens*, *glumacea*, *helvetica*, *hirsuta*, *integrifolia*, *marginata*, *Munroeana*, *nivalis*, *Pallasii*, *violacea*, and *viscosa*. Slugs and snails delight to feed on all these, which is a great drawback to their cultivation.
Pyrola rotundifolia.
Ramondia pyrenaica.
Ranunculus aconitifolius, double; *amplexicaulis*, *montanus*, and double *repens*.
Rhodiola rosea.
Saponaria ocymoides; requires to be often renewed from cuttings; a nice thing.
Saxifraga; every one of the species and varieties, to the number of thirty-two.
Sedum; all the species and varieties also; they run from twelve to fifteen kinds.
Sempervivum arachnoideum, *californicum*, *globiferum*, *montanum*, *sediforme*.
Sibthorpia europea; apt to go off in a hard winter, but one of our best evergreen trailing gems.
Silene acaulis; pink and white varieties; *alpestris*, *maritima*, and double, *Schaftii* and *Zavadskii rosea*; slugs are fond of them also.
Soldanella alpina, *Clusii*, *minima*, *pusilla*; they require particular attention, and some to be kept in pots, being among the smallest plants we grow.
Statice; all the species and varieties; a dozen at least.
Stipa pinnata.

Stillaria scapigera.

Silene acaulis, ornata, Schafti, pendula; an annual, but as good as perennial on rockwork.

Statice pseudo-armaria, and three or four other kinds.

Stipa pinnata.

Tournefortia heliotropioides.

On the supposition that the rockwork is to be free from the roots of trees, and that ordinary garden soil is made use of, the whole of these will succeed very well treated as rock plants, and all of them may be reared from seed in the spring, with the help of a cold frame, or some hand-glasses.

ROCK PLANTS THAT MAY BE RAISED FROM SEEDS to be sown in the spring, say about the middle of April—selections to be made according to individual taste.

Alyssum saxatile.

Antirrhinum majus, and endless varieties.

Arabis caucasica.

Aster tenellus.

Campanula pentagona.

„ *carpatica*.

Centaurea depressa.

Cistus; five or six kinds.

Crucianella stylosa.

Dianthus atrorubens.

„ *caucasicus*.

„ *deltoides*.

„ *hispanicus*; three

or four varieties.

„ *imperialis*.

„ *japonicus*.

„ *moschatus*.

„ *plumarius*.

„ *pulehellus*.

„ *suavis*.

„ *superbus*.

Erinus alpinus.

Eschscholtzia crocea.

Gentiana Amarella.

„ *cruciata*.

Geranium; six to ten kinds, or all the species in stock.

Geum coccineum.

„ *atrosanguineum*.

„ *splendens*.

„ *superbum*.

Helianthemum; twelve to fifteen kinds.

Hieracium speciosum.

Iberis Tenoreana.

Lathyrus latifolius, and others.

Linaria alpina.

„ *spartea*.

Linaria speciosa.

„ *versicolor*.

Lychnis corsica.

„ *Flos-jovis*.

Meconopsis cambrica.

Oenothera acaulis.

„ *macrocarpa*.

„ *prostrata*.

Ononis rotundifolia.

Orobis Fischeri.

Potentilla formosa.

„ *atrosanguinea*.

Ramondia pyrenaica.

Scutellaria macrantha.

Sedum cœruleum.

Thymus azurus.

„ *corsicus*.

„ *caucasicus*.

„ *variegatus*.

Uvularia grandiflora.

Veronica chamædrys, variegated and plain; prostrata, or repens, very pretty, but apt to perish in hard winters.

Vinca; the dwarf purple, the white, and the variegated, and they must be constantly kept within bounds, else they overrun everything around them.

Viola; all the sweet violets, and the following; *calcarata*, *canina*, *alba*, and *rubra*, *lutea*, or *pyrolæfolia*, *palmata*, and *Pennsylvanica*.

Waldsteinia geoides.

Wulfenia carinthiaica.

Zauschneria Californica.

Large plants will bloom very well in the same pots, or tubs, for years, with the removal of a portion of surface soil, and adding a similar quantity of suitable material. In all moderate-sized plants the drainage should be examined, worms looked after, and, if the soil appear at all worn-out, sour, or sodden, the worst of it removed, and fresh soil, and a clean pot given; bearing in mind, at this season, with all hard-wooded plants, to give a rather small shift, that the roots may be getting to the sides of the pot before winter. Both of these tribes of plants will stand more sun out-of-doors now than they would do in the middle of summer. Though the *Camellia* be hardy enough, the green of the foliage looks best when wintered before the shoots are at all affected by frost, or the roots saturated by cold rains. The *Azalea*, though nearly as hardy, suffers more when the roots are immoderately cooled, either by radiation, or cold rains; and, therefore, after September, if the plant be exposed, the pot and roots should be protected. The white *Azalea Indica* stands in the open air, when planted out unsheltered, in several places; but I would have little faith in its flowering if so kept in a pot above ground. All of these partaking of the habit of the above white *Azalea* become semi-deciduous, or a little more than that in winter; and, therefore, many good growers allow such plants to remain longer in a cool place, that the leaves may fall before removing to the plant-house, or forcing-house, that there may be less trouble in picking withered foliage afterwards. Young beginners had better house early in October, even though they be troubled with the fading foliage in winter.

In any shifting now, endeavour to keep the plants close, and if that is unattainable, in a shady place, until the roots are freely growing. Be particular with the drainage; a little clean moss spread over it keeps the soil from clogging it up. Any spare time should be devoted to tying and training; and if scaly insects appear on the *Camellia*, or thrip on the *Azalea*, wash with soap and water in the one case, and fumigate and syringe with weak laurel-water in the other, turning the plant over, so that the liquid does not fall on the soil.

GREENHOUSE PLANTS should now be looked over, as to top-dressing and pot-room; and all kinds, such as *Cytisus*, &c., subject to red spider, should receive a good syringing with soap-water, and often, using clean water soon afterwards. It is of importance that no plant should be housed with a worm in the soil, as nothing so soon disarranges the foundation of all good pot-culture—the drainage; and many things cannot have lime-water applied with impunity so strong as to dislodge them.

CALCEOLARIAS.—Large-flowering, florist kinds may still be propagated, by inserting the cuttings, under a bell-glass, in a shady, north aspect, the place being thoroughly drained and secured from worms. This mode, and cutting an old plant into pieces, with or without much root attached, is the only way to preserve favourite fine kinds. No disrooting, or shaking the soil from a large, old plant, and again repotting, will often be effectual in taking such plants through the winter; nor is it necessary, as a cutting in August may be grown as large as any strong man can lift by May or June. Seed of these large kinds should also now be sown; be careful, as often advised, that the seeds are not buried. Shrubby kinds, for the borders, will be propagated early enough towards the middle and end of September, choosing pieces from two to three inches in length, and placing them under glass, on a north border, in sandy soil. These, if grown on, will make better plants in May than any old plants that might be saved over the winter.

CINERARIAS.—Pot off seedlings for early blooming.

REMEMBRANCERS.

POTTING AND TOP-DRESSING.—*Azaleas* and *Camellias* that were not examined in spring, just when the young wood was forming, will require to be looked to now, more especially if they have been standing out-of-doors.

A six-inch pot will grow a nice bushy plant. Divide the old stools of last spring's plants, or take up the strongest suckers and pot them, and put both in a frame or pit, kept rather close for a time, to encourage growth. Seed may also be sown for spring blooming.

CHRYSANTHEMUMS.—Where these are wanted fine they should be carefully tied out, and the light and air allowed to play round and upon every leaf. No stopping of shoots must now be thought about, as that would just deprive you of the bloom. But as the shoots extend, all small offsets appearing in the axils of the leaves of the lower parts may be nipped out with the point of a knife, and that will throw more strength into the end buds, where flowers are to come from. Liquid-manure may also be given alternately with clear water, and the pots may be top-dressed with rotten cow-dung. No shifting should be given now, unless the plants have been growing in the ground, or plunged out in smallish pots. Even these should be potted finally before the flower-buds show much. Fly and thrip will be deterred from feasting on the foliage if they are well syringed occasionally with weak soot and lime-water, holding a small portion of sulphur in solution. The points of shoots in the border may yet be layered in small pots, for obtaining flowers on dwarf-lilliputian plants. The best mode is to have a very narrow sharp-pointed knife, to insert that in the middle of the shoot, say six or eight inches from its point, draw the knife then carefully either upwards or downwards for an inch or two, and before withdrawing, place a chip of wood, a pebble, or even a piece of earth, in the opening; cover this part an inch over with earth as it is placed on the surface of the pot; and if likely to be disturbed there, hook it down, or place a stone over it. If well watered, the pot will soon be filled with roots, when the plant may be cut off, and kept slightly shaded for a time.

HEATHS, EPACRISSES, and hard-wooded plants, in general, now requiring more pot-room, should have it without delay, that the soil may be getting appropriated before winter. Those intended to blow early, as *Epacris*, should now receive plenty of light, that the wood may be hardened, and the flower-buds set. Heavy drenching rains must, in all cases, be avoided, as they either wash the virtues out of the soil, or render it soured and caked, so that air cannot penetrate. To be secure from worms, the best plants should stand on boards, slates, &c., so that the wrigglers cannot get at the bottom of the pot. It is amazing how very thin a fat fellow can make himself when he has a particular object in view.

SCARLET GERANIUMS IN POTS should be well supplied with liquid-manure, or be liberally top-dressed, which will give size and number to the flower-trusses. When a few flowrets fade in the centre of a truss of bloom, nip them out, and the truss may go on for weeks afterwards. Those intended for blooming in winter should not now be encouraged to flower, but should receive their last shifting, and when rooted be kept rather dry.

FLORISTS' PELARGONIUMS lately pruned down, and standing out-of-doors, should be turned on their broad-sides, if heavy rains are frequent, or they will not break kindly. Tender kinds, and slender growers, as many of the Fancies, had better be moved under glass, where such a conveniency exists; as, if frequently soaked, when pruned-in, young shoots will come irregularly, and somewhat gouty. Cuttings of all these may now be made of the Scarlets and strong-growing *Pelargoniums*, in pots, boxes, or the open border; but the small Fancies will be the better by the protection of glass, whether planted out, or placed round the sides of a pot.

CACTUSES, standing in sunny places out-of-doors, will soon want protecting from autumn rains. In fact, as far as they are concerned, the water-pot may now be locked-up until the spring.

CREEPERS AND TWINERS, in the greenhouse, will now, and frequently to come, require thinning, to give sufficient light to *Fuchsias*, *Achimenes*, *Cockscombs*, *Balsams*, *Geraniums*, *Begonias*, *Thunbergias*, *Clerodendrons*, *Lantenas*, &c., which will now constitute the principal attractions of such places. Few things, at this season, look better than nice little *Fuchsias* from cuttings propagated in spring.

PROPAGATING.—Many comparatively hardy things should now be looked after without delay, as, if propagated now in a cold pit or frame, they will require much less attention than they will do a month hence, and also be much stronger and hardier in consequence. I allude to such things as *Anagallis*, *Heliotrope*, small *Lobelias*, variegated *Alyssum*, *Petunias*, finer kinds of *Phlox*, and a few of the more tender *Verbenas*, though the middle of September will do for most of the latter. Of all these, small, stubby pieces should be chosen. The choosing the cutting is three parts out of five of the success.

R. FISH.

JOTTINGS BY THE WAY.

(Continued from page 402.)

CHATSWORTH.—On leaving the Orchid houses, as mentioned in my last, I was ushered into the *Pineries*, the plants in which I found in great luxuriance, with numbers of fine large fruit. One long pit was filled entirely with the *Smooth Cayenne*, which I was told averaged from 4 to 6 lbs. weight each, and had an excellent flavour. Probably, at Chatsworth, there is the largest stock of this new, fine Pine-apple, in Great Britain.

The mode by which the Pine is cultivated here appears to be an improvement upon what is called the Hamiltonian system, which, our readers are aware, is that of planting them out in the soil of the bed, and allowing them to fruit, and the suckers to remain and fruit also. At Chatsworth, the plants are grown in pots, plunged in bark, in the usual way, until they are nearly large enough to fruit. Then they are planted out in a heated bed of rich loam, and allowed to fruit, which fruit attains, in consequence, a large size. After they have fruited, they are taken up, the suckers removed off them, and the old plants are thrown away. I believe this same method is practised also at Trentham. To me it appears this way of growing the fruit is better than when the old plants are allowed to remain, year after year, in the old exhausted soil. By thus growing the plants in pots, with the requisite number of repottings, and when large enough, to plant them out in a bed of fresh, rich soil, the plants are more certain to produce fine, perfect fruit, than by either the old method of growing and fruiting them in pots entirely, or by Mr. Hamilton's method. The best qualities or points of each method are combined hereby.

Vineries.—The Grapes at Chatsworth are, as usual, of excellent quality, though I did observe a few that were shanked. Probably this excessively wet season has been the cause. In one of the *Peach-houses* there is a very remarkable Peach-tree. Its extreme length is seventy-five feet, and its width very nearly twenty feet. This immense tree is in perfect health, and when I saw it, August 15th, it was full of the finest fruit I have seen this season.

One point of culture, at Chatsworth, I consider good, and worthy of imitation wherever the space under glass will allow it, and that is, in the old Pine Stoves, Vineries, and Peach-houses, there are no plants in pots of any kind whatever grown. It is true, it is only at such large places or gardens, as Chatsworth and Trentham, that houses are numerous enough to allow such a practice to be fully carried out, but I have seen some

places where such a method might be followed, if it was thought proper by the manager.

Another point of good management here is worthy of mention, and that is the extreme cleanliness maintained in the houses, especially in the fruit department. All the walls and flues, and, I believe, the hot-water pipes, were as white as snow, having been carefully whitewashed with the whitest of whitening. Even the stems of the Vines and Peach-trees had had a white coat put on them. This gives the houses a cheerful, clean appearance, and, no doubt, has a sanitary effect upon the trees. I could not detect a single insect on them, and in that respect the whitewashing had, no doubt, been useful.

There is here a long, narrow house devoted to the growth of the *Cucumber*. The man who had the charge of it, said the plants then in bearing were planted the 6th of August the year previously, and, for ought I could see, they were healthy and vigorous enough to bear till the August of next year. The plan of the house is, first, a walk, two feet wide, down the centre, then a border of soil, two feet wide, on each side of the walk. In these borders the plants are put out at regular distances, singly, and are trained up the back wall on the one hand, and on a trellis next the glass on the other. The roof is a ridge-and-furrow. The crop I saw growing was most enormous; but the variety grown is (in preference) not a very long one.

I perceive I have another note on *Vine-culture*, which I had nearly overlooked. One house is devoted to the variety raised at, and known as the *Canon Hall Muscat*. This sort is very apt to blister and decay in spots on some of the finest berries. To prevent this, the house here is (as soon as the berries begin to change for ripening) shaded constantly every day, so that the sun never afterwards shines upon the fruit until it is perfectly ripe. By thus shading them the blistering is prevented, and I am an eye-witness to the fact, for I could not find a single berry spotted.

The *Kitchen* and *Fruit Gardens* at Chatsworth are on a low flat, a considerable distance from the palace. This low situation is anything but favourable to the growth of vegetables, but the care and ability of the manager prevents any ill effect, or, rather, he takes methods to counteract such. I was particularly struck with the *Onions* and *Celery*, both of which were exceedingly fine. The *Onions* were cultivated by the transplanting system, that is, they are sown very early in a warm corner, and transplanted as soon as possible. Many of them (sown this spring and transplanted) were three inches diameter.

From the Kitchen-garden I walked up to the house, and the first thing I saw was the *Conservative wall*, about which I have written so much previously, that I need scarcely do more than just allude to it, and say that the plants have grown prodigiously. I must just mention what I saw on it in flower:—*Indigofera decora*, several plants, very fine; *Rhododendron javanicum*, very high coloured; several tall *Cacti*; two very large *Fuchsia corymbosa*, *fulgens*, and *serratifolia*, besides the common varieties; *Brugmansias*, three species; *Orange* and *Lemon-trees*, in fruit; and a very large, far-spreading specimen of the *Citrus decumana*, or *Shaddock*, with many of its large fruit upon it.

In front of this wall, but at a sufficient distance not to shade, is the house where the Indian-rubber Fig-tree (*Ficus elastica*) grew too large. It is now filled with healthy *Camellias*. On the front of this *Camellia* house is a small geometrical garden, which might be done away with without much regret.

Passing from this, I came in sight of a fine row of *Araucaria imbricata*, planted on the side of a walk parallel with the house. These were planted ten years ago, and average now fifteen feet high, all well furnished

with branches down to the ground. Passing these, the visitor is brought to the front of the grand cascade, which is generally played to every party, at a great expense or waste of water. From this the walk leads to some gigantic rocks, over one of which (the Wellington) is a fall of water constantly flowing. Though these rocks were all artificially put together, they are so well done that it requires a quick eye to detect the art of construction in forming them. One is said to be a fac-simile of a natural fissure in a rock at Bolton, in Yorkshire, named the *Strid*. These rocks are intermixed with sloping banks, which are planted with low shrubs in large masses. I was much pleased with two or three large masses of the Tutsan (*Hypericum*), commonly called the "Rose of Sharon." These were in full flower, and cast quite a golden glow over the scene. I thought of Mr. Beaton, and wished he had been with me; I think he would have added this lovely flower to his stock list of plants suitable for bedding purposes. Another favourite of mine, the *Cotoneaster microphylla*, is grown on these banks very profusely, as is also the dwarf *Rhododendrons ferrugineum* and *hirsutum*, and *Daphne encorum*.

These rocks and rock-plants beguile the eye and engage the attention, till, wandering on a little further, a turning in the walk brings you in full view of the front entrance to the *Grand Conservatory*, rising to the height of seventy feet, with its wavy ridge-and-furrow roof. No one that has never seen this noble edifice can possibly conceive the surprising effect it has upon the mind on this first view of its magnificence; I give it up, and say to all the readers of THE COTTAGE GARDENER—go and see it, for I cannot describe it sufficiently to give you an adequate idea of its grandeur. On this occasion I was much gratified to find the plants inside were nearly equal in size to the building, especially the *Bananas* of India. Truly, it is an Indian forest, looking across where these *Bananas* grow. The species I mean are *Musa sapientum* and *Musa Paradisiaca*. At one corner of the house there is a large grove of the dwarf *Musa Devoniana*. I have seen this grove for the last seven years in bearing, but never in so fine a state as this year; and I think I observed the cause. In the midst of them there is a fountain of water springing up and overrunning the soil. This feeds the plants, and causes, no doubt, the great luxuriance in foliage, as well as in the long, extra-large racemes of fruits now growing on them. The *Jambosa*, or Rose-apple, was also in fruit, as was also a large plant of the Aloe tribe, called *Eurcroya gigantea*. The fruit of this had changed, without falling off, into plants, of which this single tree might produce, were each planted, several thousands. This transformation I consider one of the greatest of vegetable curiosities ever seen. The plants in flower in this house were not numerous, excepting those in pots on a platform, that runs round the inside of the front windows. I noted the following:—*Musa coccinea*, many blooms; *Renanthera coccinea*, growing on a branch of a tree, very fine; some *Hibiscuses*, and several of the *Melastoma* family. This want of flowers, however, was not perceptible, for the beauty of the foliage of the *Zamias*, *Aloes*, *Palms*, and other plants, amply took the attention, and called forth the admiration of the visitors.

In one place on the platform, I noticed a large collection of the exceedingly curious genus *Sarracenias*; I am quite sure there is not such another collection in any other garden in the world. Formerly, there was a large rockery at one corner of the house visible, but now it is completely hid by the trailing fig (*Ficus prostrata*) and *Ferns*. This rockery is intended to mask the steps (formal things) that lead up to the gallery, and now it is covered with these plants, it is most effective.

From the gallery, we have a fine view of the plants

below, and also the tops of some that are level with it. The gallery surrounds the house, and it took me full five minutes to walk quietly round it. This will give the reader some idea of the size of this truly grand conservatory. For the first time, I had a peep into the heating department: there is a long tunnel and iron railway under the floor of the house. The entrance is concealed by rockwork. I was told there are seven miles of iron piping to heat it. T. APPLEBY.

CAULIFLOWER, AND OTHER PLANTS, TO STAND THE WINTER.

It is somewhat strange that the gardening works of the last century, which went into the details of cropping and other routine work, should differ so little from the practice of the present day. This fact speaks, in an unmistakeable manner, that our boasted improvements, in vegetable and other produce, is much less than we often assume it to be, since the sowing of a certain crop, on a particular day, was just as likely to ensure that crop's perfection, in a given time, as the same operation done now would do; that this absence of improvement is owing to the want of a judicious selection of seeding plants, we hardly believe; on the contrary, much has been done to obtain as many "good points" in each family as could be done, while other qualities have been aimed at as well; nevertheless, the total of these acquisitions seem to have accomplished little but what had been done an hundred years ago in many things. True it is that the great agent of all vegetation remains but little altered; or, if we regard the evidence of aged people, the change is for the worse—we mean the "seasons"—since we are told, over and over again, that finer and brighter summers existed in the last century than we are favoured with; and if the "old-fashioned" winters were severe, they might not be without their benefits; as we often now have the earliest springs after hard winters. However, as this subject has, in a measure, been treated of in former chapters, I introduce it no further than to exemplify the fact, that with the "superb varieties" of Cauliflower which are placed before us, all assuming to come in earlier than its forerunner, we have not deviated more than a week in the time of sowing since the days of our grandfathers; neither do we believe that the period of their coming into use has been at all accelerated.

Now, as a good early Cauliflower is wanted to follow in succession the late spring Broccoli without any intermission, it behoves the careful cultivator to give what attention he can to the means likely to produce such a result; but sowing *too soon* is not the most likely to do so, for the plant getting so far advanced during the cold weather, it prematurely starts into flower, or, in more practical phrase, "buttons in March." This, of course, renders it useless. Sowing *too late* is equally bad; for very small plants being liable to the many mishaps they have to encounter during a long winter, too often perish during its continuance; it is, therefore, more important to have this work performed at a certain time than many others of a gardening kind. Abereromby tells us, from the 21st to the 25th of August was the period most successful in his day. We have but little to advance against that date, beyond that another sowing may be made something later; say the last few days in the month. We have, for many years, sown Cauliflowers on the 1st of September with a fair portion of success, and depended on them for the principal spring crop; nevertheless, it is advisable to sow a few about a week earlier, in order to try a quantity of each, for it may happen that the backwardness of the season may be such as will keep the earliest ones from progressing, so

far as to endanger their buttoning, while they may come into use a few days sooner than the others, but this is uncertain; and we do not, by any means, advise large plants as being the most serviceable. However, both may be tried; and, as the importance of the crop is such as warrants the use of any and all means for its well-being, it is advisable, in the first instance, to ascertain that the seed be good; this we suppose to have been done before, as well in its vitality as in its other quality, as producing good useful heads. The ground, too, ought to be in the best position that can be obtained; and though it need not be altogether like a dungbill or compost-beap, yet it ought to be in tolerable "good heart;" and if it has been exposed in a dry state to the action of the sun, &c., for some time, so as to dry, and, perhaps, harden its tops to an unusual degree, so much the better. A good beating with the back of a spade ought to break it into fine particles, and the seed may be at once sown in beds as desired. If, however, the ground should be too rough to break easily, water might be applied; and if still obstinate, another piece ought to be selected, or, in default of that, a quantity of finer soil brought, to make a bed for the seed to lay on, as well as to cover it, and the beds sown accordingly.

Although the seeds of this and the other members of the Cabbage family vegetate quickly in the hot, moist weather of July, if such should occur then, yet they do not so rapidly obey the call now, and later on are more tardy still, so that it is sometimes necessary to give them some assistance should the weather not be favourable. This assistance may be a glass covering in a cold, wet season, or a covering of some slight material in a very dry, hot one; the latter, to save them from the drying influence of the weather, while the delicate process of germination is going on; and the former, to protect that process from an opposite cause. This care, with the modes of directing it, will best show itself to the attentive cultivator as the season advances, so that the wants of the case can only be guessed at by the description of weather, state of the ground, and other local influences. Suffice it to say, that the bed of Cauliflower plants must be examined daily, so as to make sure that everything is going on well; and if the fly or other enemy to this tribe of plants makes its appearance, let it be instantly met by the remedies so often given in the case. Watering, of course, will have to be performed, if the weather be dry, but if that be necessary, some slight shading must also be adopted, to prevent that hardening of the surface so opposed to the free ventilation of small seeds. As a homely covering, and one that answers every purpose, we cover the beds with old pea-stakes, and occasionally scatter, very thinly, over them a little of the haulm also; these are removed in dull weather, so soon as ever they can be dispensed with, and the plants thrive well so treated. Watering, in such cases, is but little necessary.

Another plant, whose wants in early spring make it almost as necessary as the Cauliflower, may also be sown now in quantity—we mean the hardy varieties of *Winter Lettuce*. Usually, the small, green, cabbaging varieties, of which that called the *Hammersmith* is the type, may be sown now to a considerable extent. Previous sowings of the same we suppose to have been made; these, though equally liable to the mishaps common at this season, are not so much affected by a too early, or a too late sowing; on the contrary, it is advisable to continue sowings of these until a late period, in order to make sure of plants necessary for the successional uses this salad is wanted for; and if the last crop of this was sown under glass, its chances of success would be much increased, and as Melon frames, &c., are sometimes at liberty then, the difficulty of getting this indulgence is much less than might be ex-

pected. Besides the hardy *Hammersmith*, a brown and green *Cos* might be sown, and the brown *Dutch* is also a good one to stand the winter; but the white Cabbaging kinds, so useful in a hot summer, are too delicate for the season. We need hardly add, that care must be taken to preserve the young seedlings from such mishaps as occasionally befall such crops at this season.

We will presume that a quantity of *Winter Spinach* had been sown about the middle of the month, and that winter *Onions*, and, it might be, a few *Carrots*, were sown about the same time; these must all be looked to, in order that nothing be omitted calculated to ensure their vegetation or preservation afterwards. Another crop of *Spinach* may also be put in, and the first crops thinned a little at the proper time. Keeping down weeds, and loosening the ground as may be wanted, and not forgetting that in such crops as have to stand all the winter, in a condition almost stationary, appearances are of much consequence, therefore, strive to make them uniformly as neat as possible, by having no jagged line, no blanks, or other bad places, and though it does not always happen thus, seedlings will come up with that degree of regularity so much wished for; yet, with a little care and forethought, much may be done that way, which during a long season will give forth tokens that good workmanship had been exercised. J. ROBSON.

CULTIVATION OF TRIFOLIUM.

Trifolium incarnatum, or Italian Clover, has now become one of the most valuable of all green crops usually cultivated for early spring food; and whether it is used for soiling cattle in their stalls, or for the folding of sheep in the open field, there is no sort of green crop which will afford so heavy a crop of the most nutritious food, as an acreable produce, to compare with Italian Clover.

It is worthy of remark, also, that this crop furnishes one of the safest kinds of green food which can be obtained—the cattle and sheep, whilst feeding on it, being generally remarkably healthy, and much less subject to scouring, and other disorders incidental to the use of early spring crops in general. The cultivation is far more difficult than that of other sorts of Clover, or green crops in general, in proof of which, for some years after its first introduction, it got into disfavour with a large majority of farmers, and its cultivation was well-nigh abandoned. Some few, however, who knew how to cultivate the crop, were very successful, obtaining immense crops, year after year: by them it was appreciated; and, from perseverance in its culture, it has at length become a favourite kind of early spring food, is justly appreciated, and not likely to recede in general estimation until some more valuable crop can be discovered to supersede it.

The time of sowing is of more consequence in the growth of *Trifolium* than that of almost any crop under cultivation. In Belgium, and other continental states, it is sown as early as the last week in July, and the first week in August; and I have noticed the best crops produced in this country have been sown at the earliest period. It generally succeeds well when sown after Tares which have been fed on the land by sheep; but it will also do well sown after a crop of winter Oats,

Rye, Wheat, or other grain, provided it be sown as soon as the crop of corn is removed.

The land should not be ploughed previously to sowing; for although I have known good crops grown after ploughing, it is quite the exception; and the best rule in its cultivation will be found to be, to sow the seed upon the stubble, or bare ground, and then work the land with the drags, or harrows, sufficient to produce a good tilth, and bury the seed, leaving the land rolled.

The only insect enemy from which the crop suffers is a small white slug; and it is desirable to sow early in order to avoid its depredations, which are always most destructive late in the season, when the sun has less power, and the nights become lengthened.

The soil best adapted for the growth of *Trifolium* is a good sandy or clay loam, yet excellent crops may be grown upon almost all kinds of land in good condition. The quantity of seed sown per acre should never be less than 20 lbs., and, in case the time of sowing is delayed beyond the usual period, 25 lbs. or 30 lbs. per acre will be no more than sufficient.

Trifolium seed being usually cheap, not more than 4d. or 5d. per pound, although a large quantity of seed is necessary, yet the acreable cost is not great, being much less than the cost of seeding for other green crops.

This crop, if fed upon the land, and managed in a proper manner, is certainly the best preparatory green crop with which I am acquainted. Swedish Turnips, as well as other varieties, generally take well after this crop; for, not only does it furnish a large bulk of food for the consumption of stock, which will return a proportionate quantity of manure, but the land will be found in an exceedingly mellow and kind state, from the effect of the gross and luxuriant foliage peculiar to the *Trifolium* plant.

It must, however, be borne in mind, that this crop is very short-lived, the season for feeding or soiling being limited to about a month at the farthest; it is, therefore, desirable not to sow a greater number of acres than can be consumed within that period, the stalks being very wiry, and showing much woody fibre, when the seed begins to form.

As a seed crop, although the produce sells generally at a low price, yet the large quantity obtained makes it a remunerative crop upon some soils. I have known *Trifolium* saved for seed upon some light, gravel soils, and taken instead of a Wheat crop, and the return has proved satisfactory, as compared with the crop of Wheat usually obtained upon such soils, and the crop has also been removed from the land in time for sowing Turnips.

When the seed is sown at the first season, here recommended, it becomes very gross towards the month of November; it does not, however, suffer from the effect of frost on this account, and it may sometimes be fed by sheep in the autumn, if not eaten off too close; yet it is not generally so forward in the spring by a week or ten days when thus fed; but although it may be somewhat later in the spring from the effect of feeding, it does not diminish the bulk of the crop ultimately.

Sometimes this crop is mown for the purpose of con-

version into Hay; it is not, however, to be recommended as a system, but may be attempted in case the crop proves to be more than can be consumed as green food within the usual period. It should be cut very early when intended for Hay; and the risk is always very great, as a comparatively small quantity of rain will seriously damage it.

This crop will be found an excellent substitute for broad Clover upon those soils which have become what is called clover-sick; and I have known instances where such land had been cropped with *Trifolium*, on which Red Clover has afterwards succeeded admirably.

JOSEPH BLUNDELL.

THE PATH OF PEACE.

By the Authoress of "My Flowers."

It is a very great encouragement to British industry that there is, in our hitherto highly-favoured land, no bar to the success and advancement of men of talent and diligence, however humble their birth may be. In other countries there is no scope for such persons. They may get rich; but they cannot rise. There is a wall of partition between the high-born and the humble that can never be climbed over; and talents and energies, of the highest and noblest order, are crushed and chained down, so that they can never aim at anything beyond the lowly sphere in which they were born. In Great Britain a man may be anything. If he has talent and determination, there is nothing in our laws and customs to prevent his becoming head and front of any profession he may choose. Circumstances, that is to say, *the providence of God*, may order it otherwise; he may lack friends, opportunities, means, to get on; but there is no legal, or social, or political reason, why he should not sit on the Woolsack; or lead a party in the country; or become the greatest physician, mathematician, civil engineer, painter, or poet of the day. This is a great spur to talent and energy; a great inducement to young men to press forward and do all that they find in their hearts to do; and a great benefit to the country too; because power and place is not confined to the well-born, but is freely open to the well-fitted; and this is a wonderful safety-valve to our hitherto prosperous land. I have been supplied with the following interesting particulars by the kindness of a friend, and I request my cottage readers' particular attention to the *character* of the man; to the path he walked in; and to the truth of the Lord's own Word: "In all thy ways acknowledge God, and he shall direct thy paths."

"James Smith was born in a small town, of very humble parents. His father was employed in the manufacture of an article of general use, and was esteemed by his master as a man of sound judgment and skill in his business. In his early age he was removed, with his parents, to another county, and he continued to assist his father in his laborious employment until the age of manhood, when he returned to his native county. The education he received was slight indeed; but his acute mind led him at once to feel his deficiencies; and, in maturer years, by his own exertions, he overcame many of the difficulties which a defective education entails. Located again in the place of his birth, he entered into the service of an eminent firm, and was, after a time, selected, on account of his ability and skill as a workman, to superintend a part of his employers' works. Here he continued until twenty-six years of age, when he was enabled, by prudent habits and self-denial, to begin a small business on his own account. It was at this time that the eminently practical and energetic character of James Smith was more fully developed. His manufactory gradually increased, as the superiority of his workmanship became more fully known; and his integrity and unbending truthfulness became better appreciated. But, more than this (*let my readers mark!*), "he was a man who acknowledged God in all his ways;" and, therefore, God blessed him in worldly things, as well as spiritually.

"I ought, perhaps, to have stated, at the outset, the kind of work James Smith was called upon to do, as soon as his hands were strong enough to wield an instrument at all. And let the cottage gardener remark, it was not the comparatively light manual labour which occupies their time, but heavy, laborious, and overwhelming work, from which the village blacksmith himself would shrink; for he had to work under extreme heat, which the strongest cannot bear long together, and which too often forms an excuse for excessive drinking. This temptation, by God's help, James Smith was enabled to withstand; and he remained a living example, that strong drink is not necessary to sustain hard work.

"From the manufacture of a small quantity of an article weekly, by degrees he made more and more; he still lived with great care; and the increase of his capital he employed in enlarging his works, until, in a few years, he became a man of independent property; looked-up to by his fellow-townsmen; respected by his compeers; and often selected to arbitrate in matters of commercial difficulty by men themselves of high standing and ability. I remember well hearing him relate an encouraging incident on the platform at a missionary meeting. The place of worship to which he was attached had a heavy debt upon it. This hung heavily on his mind—he could not bear the thoughts of God's house being encumbered. It kept him awake the whole of one night; in the morning he rose early, took stock of his business, balanced his accounts, and paid over the excess at once to the fund for the liquidation of the debt, which, as it was at an early period of his business, involved great personal sacrifice. Was he the poorer for this? By no means; for, as he himself observed, God blessed his store in an extraordinary way, and he seemed, from that moment, to prosper. Eventually, from being a man of independent property, he became a man of *great wealth*, which he most largely distributed. He became first a borough magistrate, then a county magistrate, then a magistrate for another county; was selected to fill the civic chair, the first time the privilege was granted to the town in which he resided; and had he lived a little longer, would, no doubt, have filled the office of high sheriff of his native county. But a short time ago he was borne to the grave amidst a sorrowing people, followed by more than one thousand of his own workpeople (who have since erected a monument to his memory, at the expense of several hundred pounds), while the public business of the large town in which he lived was altogether suspended, and the shops closed.

"Not very long before that lamented day, he had made a lasting provision for the poor, by investing the sum of one thousand pounds, the interest of which was to be distributed annually in blankets; so that a blessing will belong to his memory among generations to come, who know not their benefactor. "Blessed are the dead that die in the Lord and their works do follow them."

"Such was the career of James Smith; and it affords great reasons for encouragement to the *honest* working man, and great cause of thankfulness to Englishmen, that they live in a land where the poorest man can, by his own exertions, win his way to wealth and power."

Readers! this is a true tale. But if it was invented, it could not be made more instructive or encouraging. It is very like the story that every one knows of "Wittington, Lord Mayor of London." It is like the history of David, who was taken from the sheepfold to be king over Israel. It proves what God can do for those who honour Him. He does not always see fit to do it, for He knows our frame, and He preserves the weak from great temptations; but it shows what He *can* do, and how He blesses honest and lawful endeavours, when they are dedicated and used to His service and glory. Readers, do not "*make haste to be rich*," for then you shall "not be innocent;" but "*be not slothful in business*," and then, while you "lend to the Lord," you will receive it all back with usury.

This narrative comes well after that of poor Roberts, in my last paper, who was also a man of humble birth, and of considerable gains. It shows the difference between "serving the Lord," and "serving him not." Roberts could find no rest, even for the sole of his foot; but James Smith's sleep was sweet. I close this true tale with a "faithful saying," "He that tilleth his land shall have

plenty of bread; but he that followeth after vain persons shall have poverty enough. A faithful man shall abound with blessings; but he that maketh haste to be rich shall not be innocent."

CULTURE OF A ROOD OF GROUND.

SEPTEMBER.

IN my notes for August, I stated that my *Potato crop* was looking very luxuriant, and promised to be an abundant crop. Three days after I had written the above article, I noticed they began to show symptoms of the disease, and on examining them closely, I found it was spreading rapidly; and, from inquiries that I made in the neighbourhood, I soon learnt that it was becoming very general. From observations that I made, it appeared to be as virulent and rapid in its progress as it was the first year it commenced. As the disease cannot be prevented, I shall endeavour to give a description how they may be saved from being entirely lost, by making flour, or arrow-root from them.

In 1845, the first year of the disease attacking the Potato, I had a considerable portion of my ground under crop with them. As soon as the disease made its appearance, I adopted the plan of my neighbours, in taking them up, which they said would prevent the disease getting to the tubers. I, therefore, took them up as quickly as I possibly could, and put them in heaps, with the intention of covering them with earth, to preserve them from frost during the winter; but I thought I would not be too hasty in doing so. I therefore covered them with some straw for a few days, to keep the air and rain from them; a few days afterwards I had occasion to uncover them, to get some for sale, and, to my astonishment, they were decaying rapidly, although they appeared, when I took them up, to be perfectly sound; and, with the exception of my present crop this season, they were the finest Potatoes, in size, that I have ever grown. As they were going so fast, I was anxious, if possible, to prevent the entire loss. Having noticed, in that excellent work, "British Husbandry," some account of making potato-flour, I was determined to try the experiment, and I am happy to say I was well rewarded for my pains, for had I not resolved upon this plan, they would in a very short time, have been a complete heap of manure.

The following, as near as I can recollect, is the way I went to work:—The process (by hand) is by grating the potato, on a bread-grater, into a pulp. This plan being very slow and tedious, I got a piece of block-tin, at the tinman's, about a foot square, pierced with holes, and fixed it on the centre of a small pair of brewing-tongs I had by me, I then set one end of these tongs into a tub, and rested the other end, when sitting, against my chest, and grated the potatoes into the tub. After having grated as many as the tub would hold, I had another tub half-filled with water, and a fine hair sieve, which I placed in the water with one hand, and with the other put the pulp into the sieve, not too much at a time, and kept stirring it till all the flour was washed out, which was in two or three minutes, and was settled at the bottom of the tub like sand. I continued in this way to wash all the pulp that I had grated, and as I washed it, I threw it aside for manure. In order to get the flour perfectly clean and white, it must pass through several washings in clean water, by stirring it with the hand. As soon as the water remains perfectly free from any colour or sediments it will be sufficiently washed. It must then be spread thinly on clean cloths, and laid in the sun till it becomes perfectly dry; great caution is necessary in drying it. If it were dried too quick before the fire, or in an oven, it would bake into a hard cake, and would be entirely spoiled, as it would not keep. When quite dry, it will be as white as snow, and will keep for several years; in proof of which, we have a small quantity by us made at the above time, and, to appearance, it will not be known from the so-called arrow-root of the shops. In this way we made more than fifty-six pounds of flour, which, if we had not done, the potatoes would have been entirely lost to us, excepting for manure. It proved very valuable to us for various purposes; such as mixing a portion with wheaten flour for making bread, or mixing with boiling-water; or with milk, sweetened with sugar or treacle, it is

delicious. It may be said to be a tedious process, but the value of the flour will well compensate for the trouble. Although the potatoes were in a very forward state of decay, the flour was not the least affected by it.

In the year 1848, when I found my potatoes were decaying, I cooked them to feed my pigs with, mashing them with meal, &c., which I found to be excellent for fattening; the particulars of which I have given in my little work on pig feeding, &c. But the decay being so rapid this present season, I dare not venture to use them for that purpose. At the present, we are using some of them that are not too far gone, to feed our fowls with, by boiling them, and mash them with pollard and barley-meal, which they appear to do well with, and are very fond of them.

In 1845, a person in this neighbourhood was simple enough to put his potatoes in a heap, or clamp, and cover them with straw and earth, to keep till the spring, as he said they would then be worth 30s. a sack; and although they showed symptoms of decay when he took them up, he was sure, by keeping them from the air, they would go no further. The consequence was, when he opened the heap in the spring they were a complete heap of manure.

Where a portion of the rood of ground has been occupied with wheat, no time should be lost, after the crop has been cleared off, in giving it a thorough digging and cleaning, and if any portion of it be required for early spring Cabbages it must be well manured. I have found the present month to be the best time for sowing *Drum Cattle Cabbage seed*, the plants to remain on the beds till the spring, and to be set out in May where they are intended to stand. In this way they will grow to a much larger size than when the seed is sown in the month of March, as they can be transplanted a month earlier. I have grown Cabbages from the seed sown at this time that have weighed as much as 35 lbs. each.

Winter Beans have of late been grown to a considerable extent in this part of the country (Suffolk), and the crops are, generally, more abundant than those sown in the spring. If a portion of the wheat ground be desired for this crop, the latter part of this month is the proper time to put them in. The distance I dibble my Beans in is sixteen inches, from row to row, and six inches apart in the rows, which I find quite close enough on good land, and the produce more abundant than it would be if the rows were closer, particularly with the winter Beans, as they grow more luxuriantly than those sown in the spring.

No time must be lost in digging and cleaning the land as it becomes vacant, that it may be fit to receive future crops. The way in which I sow my Wheat, preparing the land, &c., I shall give in my notes for next month, that being the time I always put mine in.

In THE COTTAGE GARDENER of June 9th, I stated that our *Shanghai Pullet* (hatched the middle of July, 1852) had produced us sixty living chickens, which we have reared, and up to the present time, August 16th, that I am now writing, we have hatched altogether from her eggs, one hundred and eleven chickens, which are all living, and strong, healthy birds, and she is now sitting on her last batch of thirteen eggs. How we manage our fowls, in hatching, rearing, feeding, &c., I shall give in a future paper.—JOHN SILLETT.

POULTRY VARIETIES.

HAVING observed, in the review of the London Summer Poultry Show, in THE COTTAGE GARDENER of the 5th ultimo, a statement, that the *Jerusalem* and *Russian* (or more properly *Bengal*) fowls, exhibited by me there, appeared to be cross-bred birds; I must beg leave to correct this error, having, as I consider, the very best proofs of their being both as pure and distinct breeds as any of the more generally known sorts; viz.—that for three generations every chick has appeared in colour, shape, and general characteristics, precisely like the parents; and I have, at this moment, a flock of thirty-eight *Russian* or *Bengal* fowls, and twenty-six *Jerusalem*, old and young, all bearing every mark of purity of race; in fact, *all alike*.

The *Jerusalem* were brought from the Holy Land, some

six years since; the *Russian* were, I believe, imported from Bengal.

I may mention, that in addition to the above, I have five other distinct breeds in my possession (besides three breeds of Polands, viz., the perfectly *Black-bearded Poland*, the *Yellow*, and the *Cuckoo*), as yet scarcely, if at all, known in this country.

The *Breda Fowl*; black birds, with no combs whatever, but long wattles; very long in shape, and feathered-legged.

The *Brazilian*; very much like the Malay, but bearded.

The *Normandy*; speckled black and white, with small topknots, and five claws. Obtained a prize at the London summer show.

The *Bruges*; a very large, slaty-blue fowl.

The *Crive-caux*; two varieties, one rather like inferior Silver Polands in colour; the other variety, the hens black, and the cocks black, with yellow backs and necks, small topknots, and beards, and very curious combs, like two horns, which is the great peculiarity of this breed.—W. G. VIVIAN, *Singleton, Cornwall*.

THE RHODIAN VINE.

THE *Trebiana*, a little-known Grape, it will we remembered, was adverted to at page 477, as a most important white Grape for the late dessert; and I here beg to call attention to the "*Rhodian Vine*," which at least possesses merit, it would appear, sufficient to recommend it to those who like a little variety.

A plant here, given to my worthy employer as a choice variety, last year, has grown surprisingly, and evinces a very strong habit. As I felt an interest in the plant, I at once wrote to a gentleman, scarcely second to any authority in the country, as to its merits; knowing, also, that he had seen a fair specimen. He kindly answered as follows:—

"RHODIAN GRAPE.—Specimen taken from a bunch of about five pounds weight. On the shoulder received, the berries are loose, on long and rather slender pedicels. The berries are middle-sized, roundish-oval. Skin green, very thin. Pulp green, melting, juicy, tolerably sweet, but not equal in flavour to the *Chasselas de Fontainebleau*. The specimen, however, was scarcely ripe. Some leaves accompanying the above were fifteen inches by thirteen inches across."

Thus much as to my friend's opinion made in 1852, on which the utmost reliance may be placed. Now, I happen to know that the Grapes in question were slightly unripe in the most of that year, for what reason I cannot decisively say; but it is a tolerably fair inference, that this kind requires much heat, as most, naturally, late Grapes do; and now the question will arise—Is it a keeper? If so, we shall add another white berry to our *Tokay* section, and a companion to the *Trebiana*, with this agreeable diversity, that the skin and pulp are green; and everyone knows that the green of a green grape is most delicate.

My plant, in its present condition, might fairly be taken for the *Assyrian Vine*. The foliage, it may be added, has a glaucous or downy tint beneath.—R. ERRINGTON.

POTATOES AND OTHER CROPS.

LAST year I remember to have expressed myself strongly on behalf of the Potato, stating, in the face of all depreciatory, foreboding conclusions, that I, for one, most certainly intended to persevere in its cultivation; a determination I have no cause to regret, nor from which do I intend to cry—I have erred. I cannot further the cause better than by affording you ocular and gastronomic evidence of my success. The tubers I send are neither the largest, nor the smallest, but from the medium-sized portion of my crop, averaging 140 sacks for an acre.

They were sufficiently ripe for lifting, on a case of emergency, in the fourth week of July; but the London Poultry Show claiming my presence, I deferred the operation to the first week in August. I cannot say either that the haulm was not affected, nor that the tubers are perfectly free from disease,

for I have had *ten* so infected up to the present time. I am sanguine enough to think the remainder will escape it. In order not to encroach upon your space, I refer, for my system of cropping and storing, to THE COTTAGE GARDENER, vol. vi., page 406; and vol. ix., page 48; also to Numbers 10 and 11. of *The Cottage Lamp*.

The uncongenial state of the weather prevented my planting in the autumn of last year, in fact, from this circumstance, the season had advanced to the last week in March before I could do so; a convincing proof that there is no royal rule for planting Potatoes; and I am not quite sure, from what Mr. Errington said in the spring, and the force of circumstances working out for me the very same plan, whether I shall not adopt the system in future. It is this:—From the first, my seed are always placed in single layers on shallow, wooden trays, in a subdued light, where no frost can reach them; and on no consideration whatever is the first shoot allowed to become maimed or bruised. Agreeably to the size of the tuber I allow two shoots, but never more; all others are rubbed off in their infancy. This has always been my practice with my first early Potatoes, though last year, from reasons stated above, early and second earlies underwent the same process. When I planted them the tubers were wrinkled, with sturdy shoots about three inches long attached to them as firm as the limpets to the rock. It is quite necessary that the trays or floor whereon the tubers rest should be perfectly dry, otherwise the roots which strike from the base of the shoots, instead of remaining strong and wiry, grow away weak, and become matted together, deteriorating the set. Of course the soil, from remaining unoccupied during the winter, underwent as thorough pulverizations as opportunity occurred, and it was in capital tilth when planted. To accommodate the young shoots, I adopted the Shropshire method of planting. The ground being entirely dug over, I strained a line, and cast out the soil about four inches deep, with the back of the spade bearing against the line longitudinally; I placed the sets in this trench, the shoots leaning against the upright side; shifted the line for the second row, and the soil next removed cast over, covering the first row of sets, and so on. It is a very expeditious plan. I do not use a particle of dung, the ground being sufficiently hearty after the root-crops. When the green tops appear above ground, which they did this year remarkably regularly, the ground is well-forked between the rows, and the young shoots slightly covered with mould, to protect them from frost. A moulding-up is allowed them in due time, and nothing more is required until they are ready for taking-up, unless, peradventure, they incline to form seed-balls: these, of course, are instantly removed.

The first early sorts I forward you, are the *Walnut-leaved Kidney*, and *Mitchel's Early Albion Kidney* (very like the Walnut-leaf—an excellent Potato). The second earlies are the *Prince of Wales Kidney*, *Red Ash-leaved Kidney*, the *Fortyfold*, and *Martin's Seedling*. *Mitchel's Albion*, the *Red Ash-leaf*, and *Martin's Seedling* are fresh varieties to me this year; there is no mistake about them, the latter, especially, is a poor man's Potato. It also unites the good property of forming its tubers close to the stalk. The *Fortyfold* and *Prince of Wales* I distributed some years ago, as something worth having, to many parts of the country, though I trust I have not been guilty of perpetuating a synonym for the latter. How I became acquainted with its highness was as follows:—Upon finding that my neighbour, Mr. John Pritchett, was cunning in Potatoes, I applied to him for some seed; the result was, the *Prince*, and a later variety, which I have given up, one year's trial convinced me of his highness's worth; and I inquired of Mr. Pritchett, where he got it from, as the name was new to me? He said he could not tell; but having formerly observed its earliness, comparatively with his other sorts, the idea struck him, that as the *Prince of Wales* was to become a very forward person, he would christen it after him. It is a production worthy of its day and title. The sample I send is from Mr. P.'s crop; and he informs me, he never had a better one.

Now, how is this? It convinces me, more and more, that sufficient care is not allowed for the preservation of seed, and preparing the soil to receive it. My neighbour adopts the same method as myself, and we get good sound crops.

His soil is quite of an opposite nature to my own, and the situation also different—lying open and exposed, whereas mine is nearly surrounded and shaded by trees.

I could go on with instances, and write for a month upon the subject; but the real fact is, it depends entirely upon people themselves; and the only preventive for the murrain is to use diligence, keep the soil well-drained, in good heart, and tilth; use no raw material at the time of planting; take proper care of the seed; sow only the early ripening varieties, and store the produce in layers never more than six or eight inches in thickness, in a dry, dark place. Thus, the tubers are out of the soil sufficiently early for the ground to become occupied with the winter cabbage tribe, or sown with early turnips, or transplanted with Swedes, &c.; and so, instead of the disease proving itself a curse, it is made to become a blessing to mankind, through instructing him to secure two crops from his ground in the place of one.

In order to fill up the hamper, I will enter two or three other productions. The Pea is a variety called the "*Dulce Magna*." A few were presented to me, three years ago, by a Suffolk gardener, as a great favour. I thought I had arrived at the acme of Pea cultivation with *Thurston's Reliance*, but I have astonished myself with this great sweet Pea. I allow the sample and flavour to speak for themselves, when I have no doubt you will second my anxiety that it should be known through the length and breadth of the land, as a Pea well worthy of cultivation. The single haulm you may perceive measures 9 feet 6 inches in height, has six offsets or branches, numbering 46 pods and 18 blossoms. I do not generally allow them to attain this height, for by stopping so soon as the first blossom appears, they seldom much exceed the stature of six feet.

The *Gooseberries* and *Currants* are from a neighbour's garden (Mr. John Fardon, Watchmaker). They are not specimens got up for show, but gathered from bushes bearing very heavy crops. Mr. F. has shown some first-rate fruit in his day; and, if it came to the point, ye men of Lancashire, be it known, there are very large *Gooseberries* grown in Oxfordshire, even, and *Currants* too. The most ardent sticklers for making the most of a small piece of ground would be satisfied to their heart's content if they saw Mr. F.'s garden. He has the best collection of German Stocks, now in bloom, that I have seen this year. As I parted from him to-day, he observed, "*We can garden a little you see, as well as make watches, and set diamonds!*" I have had some very fine *Gooseberries* myself this year, but they would *not* wait! for the *Potatoes*. My *Strawberries*, also, were abundant and excellent, thanks to the "faggots" (see vol. vi., page 278; and *The Gardener's Almanac* for 1852). Scarcely any were soiled or spoiled by the rain, nor preyed upon by slugs, wireworms, &c. The *Raspberries* were an excellent crop, so were the *Currants*, as the preserve jars testify. *Currants* I shall be enabled to gather for some time to come, as I have some under their protectors.

My wall-fruit-trees are too young to expect much from; still I have a sprinkling of *Pears*, a good crop of *Morello Cherries*, and a capital show of *Grapes*; *Apricots* about here are a failure, and *Apples* are partial; my *Peach* tree is a failure, both in crop and kind; for the nurseryman, instead of sending me a *Grosse Mignonne*, which I ordered, sent me—the first thing; no matter what. * * * My kitchen garden crops are as flourishing as I could wish for—the result of good drainage and liquid-manure; and, considering the season, I think a fair amount of honey will instantly be forthcoming from the bees.

By the fragment of stalk (*Hieracleum giganteum*), you will perceive I am up to the circumference, with July 21st, page 311. The entire plant measured 9 feet 6 inches in height. Mine, like 311's plants, were lions in the flower-way here; they are, certainly, majestic looking fellows, though too many of them would soon cloy, and appear common. One of my plants, just before the side-branches opened for bloom, would have formed the most perfect model for an epergne, or candelabrum, of anything I ever saw. I advise Messrs. Hunt and Roskell, when they commission their artists next year, to study nature, to caution them to give an eye for these graceful plants.

I have allowed my observations to take a course over the

crops in this vicinity (Woodstock), and, generally speaking, farmers will not be far short of their reckonings. The breadth of land under *Wheat* is not so extensive as usual, but the wheat is good in quality. *Barley* and *Oats* are especially fine, I never saw better: all of them are fast assuming their yellow harvest livery, and the sickle and the scythe are in full operation. (A good-natured farmer who brought us a present of two couple of young pigeons, said, if it had not been for the rain of yesterday, August 18th, he should have completed carting his wheat to-day.) *Beans* and *Peas* are good for these parts; I have witnessed no blight. Cows and beasts are luxuriating in a rich *afterbite*, and what deficiency of sample may have happened to the *Hay* and *Clover*, on account of the weather, will be amply compensated for by the superior crops of *Turnips*; the last-mentioned of which will reap wonderful benefit by a thorough soaking of rain mentioned above.

The late variety of *Potatoes*, which people will doggedly cultivate, are, of course, a failure; the medium sorts are blighted in the haulm, not so their tubers; comparatively, for late years, their crops are sound and encouraging.

UPWARDS AND ONWARDS.

[Most readily and unreservedly do we bear testimony to the excellence of the samples sent to us. Every one of the *Potatoes* is of that average size most suitable for table use, perfectly free from disease, and every one is devoted to be used for planting. The *Peas* (*Dulce Magna*) are as good as any we have ever tasted, very large and very prolific. In all these qualities, they at least equal the Knight's Marrow, and we do strongly recommend our correspondent to adopt means for its general introduction. The other garden products were all first-rate, and bear unmistakeable testimony to the good gardening at Woodstock.—ED. C. G.]

SOWING GERANIUM SEED.

My seedling *Geraniums* of this year are some of them stout plants already. Life is much too short for that old plan of keeping the seeds till next spring. I never suffer the seed to ripen so thoroughly as to make the awn curl up and show the seed, but remove it while yet a little immature, never letting it get dry. I thus save many days. I also germinate them by half-filling a tin-box with damp sand, placing the seeds on it. I then shut the box and put it in the stove till they sprout. Thus I avoid the perpetual risk of drying-up in the sunshine, which will often delay the germination for months, if not altogether.—IGNESCENS.

TAN PREVENTIVE OF CATERPILLARS.

At page 306 of THE COTTAGE GARDENER, inquiry is made relative to the best mode of preventing the ravages of caterpillars on *Gooseberry*-trees. I think I have a remedy more simple and efficacious than that referred to. I can speak from experience, having used it above ten years, and instead of having my trees infested, as they formerly were, I hardly ever see one on them. Every year I scatter the old spent Tan under the trees, and I suppose it may be that the butterflies do not like the smell of it, as afterwards they hardly ever come near. It will have the same effect. sprinkled between rows of greens and cabbages. I have found it so useful, that it ought to be universally known. It renders that (old Tan) valuable, which is often valueless.

E. C.

SURREY ZOOLOGICAL GARDENS POULTRY SHOW—AUGUST 23, 24, and 25.

THE Show of Birds was not good on the whole; but Class 2, *Shanghaes*, were a good class, and *Aylesbury Ducks* were very first-rate. Our reporter thinks these were the only two worth particularizing. The weather was bad, and the attendance, consequently, small.

JUDGES.—Edward Hewitt, Esq., Eden Cottage, Sparlbook,

Birmingham; Mr. John Baily, Mount Street, Grosvenor Square; Mr. J. H. Catling, King Street, Portman Square.

Class 1.—COCHIN-CHINA.—BUFF, LEMON, or CINNAMON. (For the best Cock and two Hens of any age.)

7. First prize, Mr. John Fairlie, Cheveley Park, Newmarket. 23. Second prize, Mr. Thomas H. Potts, Kingswood Lodge, Croydon. 2. Third prize, Mr. Thomas Rawson, "The Hurst," Walton-on-Thames.

Class 2.—COCHIN-CHINA. (For the best Cockerel and three Pullets, Chickens of 1853.)

88. First prize, Mr. J. Eason, Thurlow Lodge, Lower Norwood. 51. Second prize, Mr. William Henry Snell, Shirley Cottage, Norwood. 50. Third prize, Mr. Henry Gilbert, 17, Upper Phillimore-place, Kensington.

Highly Commended.—25. Mr. Christopher Rawson. 44. Mr. W. Plummer, Brislington, near Bristol. 47. Mrs. Sarah Fookes, Whitechurch, Blandford, Dorset. 49. Mr. Henry Gilbert. 112. Mr. John Fairlie, Cheveley Park, Newmarket.

Class 3.—COCHIN-CHINA.—WHITE. (For the best Cock and two Hens of any age.)

121. Second prize, Mr. W. Hodgkinson, Gough-hill, Birmingham. First and third prize withheld. Class not meritorious.

Class 4.—COCHIN-CHINA.—WHITE. (For the best Cockerel and three Pullets, Chickens of 1853.)

133. First prize, Mr. B. Holmes, 112, New-street, Birmingham. 126. Second prize, Mr. Thomas Blomfield Fairhead, Cressing, Essex. 132. Third prize, Mr. W. Hodgkinson, Birmingham.

Class 5.—COCHIN-CHINA.—BROWN, PARTRIDGE, or GROUSE. (For the best Cock and two Hens of any age.)

142. First prize, Mr. John Fairlie, Cheveley Park, Newmarket. 143. Second prize, Mr. John F. Chater, Haverhill. 138. Third prize, Mr. G. C. Adkins, Edgbaston, near Birmingham.

Class 6.—COCHIN-CHINA.—BROWN, PARTRIDGE, or GROUSE. (For the best Cockerel and three Pullets, Chickens of 1853.)

154. First prize, Mr. E. B. Mapplebeck, Bullring, Birmingham. 156. Second prize, Mr. John Fairlie, Cheveley Park, Newmarket. 150. Third prize, Mr. John Chater, Haverhill, Suffolk.

Class 7.—COCHIN-CHINA. (For the best Cockerel and one Pullet, Chickens of 1853, of any of the previous colours.)

158. First prize, Mr. T. Rider, Staplehurst. 206. Second prize, Mr. John Fairlie, Cheveley Park, Newmarket. Class not meritorious.

Class 8.—COCHIN-CHINA.—BLACK. (For the best Cock and two Hens of any age.)

212. First Prize, Mr. T. H. Fox, Skinner-street. 213. Second Prize, Mr. H. Parker, Handsworth, near Birmingham.

Class 9.—COCHIN-CHINA.—BLACK. (For the best Cockerel and two Pullets, Chickens of 1853.)

217. First prize, Mr. E. H. L. Preston, Great Yarmouth. 226. Second prize, Mr. John Fairlie, Cheveley Park, Newmarket. 214. Third prize, Mr. Christopher Rawson, Walton-on-Thames.

Class 10.—SPANISH. (For the best Cock and two Hens of any age.)

237. First prize, Mrs. Lydia C. Stow, Breddon, near Tewkesbury. 235. Second prize, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire. 239. Third prize, Mr. T. H. Fox.

Class 11.—SPANISH. (For the best Cockerel and three Pullets, Chickens of 1853.)

258. First prize, Captain W. W. Hornby, R.N., Knowsley Cottage. 245. Second prize, Mr. Nathan Nathaniel Dyer, Manor House, Breddon, near Tewkesbury. 243. Third prize, Mr. Christopher Rawson, Walton-on-Thames.

Class 12.—SPANISH. (For the best Cockerel and one Pullet, Chickens of 1853.)

258. First prize, Mr. E. Simons, Dale-end, Birmingham. 259. Second prize, Captain W. W. Hornby, R.N., Knowsley Cottage.

Class 13.—DORKING.—COLOURED. (For the best Cock and two Hens of any age.)

271. First prize, Captain W. W. Hornby, R.N., Knowsley Cottage. 273. Second prize, the Hon. Mrs. D. Astley. 263. Third prize, the Rev. and Hon. H. Noel Hill, Berrington, Shrewsbury.

Class 14.—DORKING.—COLOURED. (For the best Cockerel and three Pullets, Chickens of 1853.)

278. First prize, Mr. J. R. Rodbard, Aldwick Court, near Bristol. 284. Second prize, Mr. T. H. Potts, Croydon. 283. Third prize, The Hon. Mrs. D. Astley, Swanton House, Thetford.

Class 15.—DORKING.—COLOURED. (For the best Cockerel and one Pullet, Chickens of 1853.)

289. First prize, Captain W. W. Hornby, R.N., Knowsley Cottage. 290. Second prize, Mr. W. G. K. Breavington, Vicarage Farm, Sutton, near Hounslow. 285. Highly commended, Mr. Christopher Rawson, Walton-on-Thames.

Class 16.—DORKING.—WHITE. (For the best Cock and two Hens of any age.)

294. First prize, Mr. Joseph Jennens, Moseley, Birmingham.

Class 17.—DORKING.—WHITE. (For the best Cockerel and three Pullets, Chickens of 1853.)

301. First prize, Mr. Joseph Jennens, Moseley, Birmingham. 300. Second prize, Mr. Joseph Jennens, Moseley, Birmingham.

Class 18.—POLANDS.—BLACK WITH WHITE CRESTS. (For the best Cock and two Hens of any age.)

309. First prize, Mr. G. C. Adkins, Edgbaston. 310. Second prize, Mr. T. P. Edwards, Railway Station, Lyndhurst.

Class 19.—POLANDS.—BLACK WITH WHITE CRESTS. (For the best Cockerel and three Pullets, Chickens of 1853.)

314. First prize, Mr. G. C. Adkins, Edgbaston. 316. Second prize, Mr. T. P. Edwards, Railway Station, Lyndhurst. Class meritorious.

Class 20.—POLANDS.—GOLDEN. (For the best Cock and two Hens of any age.)

321. First prize, Mr. W. G. Vivian, Singleton, near Swansea. 319. Second prize, Mr. G. C. Adkins, Edgbaston.

Class 21.—POLANDS.—GOLDEN. (For the best Cockerel and three Pullets, Chickens of 1853.)

326. First prize, Mr. R. H. Bush, Ashton Lodge, near Bath. 327. Second prize, Mr. W. P. Mapplebeck, Bull-ring, Birmingham.

Class 22.—POLANDS.—SILVER. (For the best Cock and two Hens of any age.)

332. First prize, Mr. G. C. Adkins, Edgbaston. 329. Second prize, Mr. Christopher Rawson.

Class 23.—POLANDS.—SILVER. (For the best Cockerel and three Pullets, Chickens of 1853.)

337. First prize, Mr. Henry Nye, Bostal-road, Rochester. 338. Second prize, Mr. T. H. Potts, Croydon.

Class 24.—GAME FOWLS.—BLACK-BREASTED AND OTHER REDS. (For the best Cock and two Hens of any age.)

342. First prize, Mr. G. C. Adkins, Edgbaston. 346. Second prize, Mr. J. Monsey.

Class 25.—GAME FOWLS.—BLACK-BREASTED AND OTHER REDS. (For the best Cockerel and three Pullets, Chickens of 1853.)

348. First prize, Mr. John Buckley, Desford, near Leicester. 349. Second prize, Mr. N. N. Dyer, Manor House, Breddon, near Tewkesbury.

Class 26.—GAME FOWLS OF ANY OTHER COLOUR. (For the best Cock and two Hens of any age.)

353. First prize, Mr. G. C. Adkins, Edgbaston. 354. Second prize, Mr. J. R. Rodbard, Aldwick Court, near Bristol.

Class 27.—GAME FOWLS OF ANY OTHER COLOUR. (For the best Cockerel and three Pullets, Chickens of 1853.)

355. First prize, Mr. John Buckley, Desford, near Leicester.

Class 28.—MALAY. (For the best Cock and two Hens of any age.)

363. First prize, Mr. T. J. Cottle, Pulteney Villa, Cheltenham. 360. Second prize, Messrs. Mayston and Goodman, High-street, Tottenham.

Class 29.—MALAY. (For the best Cockerel and three Pullets, Chickens of 1853.)

369. First prize, Mr. Leighton, Cheltenham. 368. Second prize, Messrs. Mayston and Goodman, High-street, Tottenham.

Class 30.—HAMBURGH.—GOLDEN-SPANGLED. (For the best Cock and two Hens of any age.)

372. First prize, Mr. G. C. Adkins, Edgbaston. 375. Second prize, Mr. Joseph Jordan, Waterfall Cottage, Birmingham.

Class 31.—HAMBURGH.—GOLDEN-SPANGLED. (For the best Cockerel and three Pullets, Chickens of 1853.)

378. First prize, Mr. T. P. Edwards, Railway Station, Lyndhurst.

Class 32.—HAMBURGH.—SILVER-SPANGLED. (For the best Cock and two Hens of any age.)

381. First prize, Mr. Christopher Rawson, Walton-on-Thames. 383. Second prize, Mr. J. Jordan, Waterfall Cottage, Birmingham. 386. Highly commended, Mr. G. C. Adkins, Edgbaston.

Class 33.—HAMBURGH.—SILVER-SPANGLED. (For the best Cockerel and three Pullets, Chickens of 1853.)

394. First prize, Mr. Matthew Leno, jun., Hemel-Hempstead, Herts. 392. Second prize, Mr. G. C. Adkins, Edgbaston.

Class 34.—HAMBURGH.—GOLD-PENCILLED. (For the best Cock and two Hens of any age.)

396. First prize, Mr. John Nickols, Southlee House, Datchet. 397. Second prize, Mr. W. G. Vivian, Singleton, near Swansea.

Class 35.—HAMBURGH.—GOLD-PENCILLED. (For the best Cockerel and three Pullets, Chickens of 1853.)

399. First prize, Mr. J. B. Chune, Coalbrookdale. 398. Second prize, Mr. C. Rawson, Walton-on-Thames.

Class 36.—HAMBURGH.—SILVER-PENCILLED. (For the best Cock and Hen of any age.)

407. First prize, The Hon. Mrs. D. Astley, Swanton House, Thetford. 405. Second prize, Mr. G. C. Adkins, Edgbaston.

Class 37.—HAMBURGH.—SILVER-PENCILLED. (For the best Cockerel and three Pullets, Chickens of 1853.)

409. First prize, Mr. C. Rawson, Walton-on-Thames. 414. Second prize, Miss R. Walker, Clipston Rectory.

Class 38.—BANTAMS.—GOLD-LACED. (For the best Cock and two Hens.)

429. First prize, Mr. Uriah Sparey, Markyate-street, Dunstable. 426. Second prize, Mr. Francis Redmond, Swiss Cottage, St. John's Wood.

BANTAMS.—SILVER-LACED. (For the best Cock and two Hens.)

434. First prize, Mr. Uriah Sparey, Markyate-street, Dunstable. 433. Second prize, Mr. F. Redmond, Swiss Cottage.

BANTAMS.—GINGER OR BUFF. (For the best Cock and two Hens.)

437. First prize, Mr. John Fairlie, Cheveley Park, Newmarket. 435. Second prize, Mr. G. C. Adkins, Edgbaston.

BANTAMS.—BLACK. (For the best Cock and two Hens.)

441. First prize, The Hon. Mrs. D. Astley. 438. Second prize, Mr. T. Oliver, Thorpe Hamlet, near Norwich.

BANTAMS.—WHITE. (For the best Cock and two Hens.)

449. First prize, Rev. Grenville Frodsham Hodson, Chew Magna, near Bristol. 445. Second prize, Mr. W. G. Vivian, Singleton, near Swansea.

Class 39.—FOR ANY OTHER DISTINCT BREED. (A Cock and two Hens of any age.)

462 Prize £2, Mr. E. Simons, Dale-end, Birmingham. (Anconas, pure breed.) 475. Prize £2, Mr. John Fairlie, Cheveley Park, Newmarket. (Chamois Polands.) 478. Prize £2, Mr. T. H. Potts, Croydon. (White Polands.) 452. Prize 10s., Mr. C. Rawson, Walton-on-Thames. (Algerine Silk Fowl.) 470. Prize 10s., Mr. J. Taylor, jun., Cressy House, Shepherd's-bush. (Andalusian.) 476. Prize 10s., Mr. John Fairlie, Cheveley Park, Newmarket. (Dumplings or Scotch Bantams.)

Class 40.—FOR ANY OTHER DISTINCT BREED. (For deserving specimens of a Cockerel and three Pullets, Chickens of 1853.)

490 Prize £2, Mr. John Fairlie, Cheveley Park. (Branah Poultras.) 492. Prize £2, Dr. Burney, Brockhurst-lodge, near Gosport. (The Ptarmigan.)

Class 41.—GEESE. (For the best Gander and two Geese.)

493. First prize, Mr. C. Rawson, Walton-on-Thames. (Toulouse Geese.) 500. Second prize, Mr. W. G. K. Breavington, Sutton, Hounslow. 498. Commended, Mr. J. Thorne, Mawby House, South Lambeth.

Class 42.—DUCKS.—AYLESBURY.—WHITE. (For the best Drake and two Ducks.)

517 First prize, Mr. W. G. K. Breavington, Sutton, Hounslow. 523. Second prize, Mr. John Weston, Aylesbury. The whole class highly meritorious.

DUCKS.—MUSCOVY. (For the best Drake and two Ducks.)

532 First prize, Mr. W. Hodgkinson, Gough-hill, Holloway-head, Birmingham.

DUCKS.—ANY OTHER VARIETY. (For the best Drake and two Ducks.)

536 First prize, Miss Steele Perkins, Sutton Coldfield. (Black Buenos Ayres, or Labrador.) Second prize withheld.

Class 43.—TURKEYS. (For the best Cock and two Hens.)

541. First prize, Mr. John Fairlie, Cheveley Park, Newmarket. 540. Second prize, Mr. J. R. Rodbard, Aldwick Court, near Bristol. (Wild American.)

Class 44.—GUINEA FOWLS. (For the best pair.)

549. First prize, Mr. John Fairley, Cheveley Park, Newmarket. 547. Second prize, Mr. J. R. Rodbard, Aldwick Court. The Dealers' Prize awarded to Mr. Philip Castang, Leadenhall Market.

THE POTATO MURRAIN.

SEEING so many contradictory reports in the papers relative to the Potato disease, some asserting that it does, and some that it does not, exist, even to a slight extent; this year I have taken pains, not only to make inquiries, but also to see some taken up in different gardens. The tops in all the gardens, and in many fields in this district, show the presence, more or less, of the disease; and, in one garden I was in last week, at many of the roots there actually did not exist a single Potato, all having rotted away, and that in a soil by no means either heavy or wet.

Having myself, for several years, been my own working gardener, I paid great attention to Potato-setting, earthing-up, and storing them for use; and, having tried different manures, some of the richest and rankest description, namely, half-decayed animal matter, in addition to common manure and guano, I was never able to distinguish, except in the produce (which, of course, was much greater where the strongest manure was applied), any variation in the quantity of diseased Potatoes per row.

Many people assert that autumn-planted ones are freer from the disease, which I attribute not to the time of planting, but to their being covered deeper with soil, under the

idea of protecting them from frost; for I have proved, beyond all doubt, that the deeper the sets are put into the ground, provided the soil is not of a heavy description, and the greater quantity of earth that is thrown up against them when they are earthed-up, the freer they are from the disease; and, by strict observation, this opinion is more strongly confirmed by hundreds of instances, where the Potatoes attached to the stem, and deep in the ground, are sound, but those that have sprung from the other Potatoes, and come near the surface, are rotten.

The disease, no doubt, comes in close, hot weather, when the air is charged with electric fluid, and is caused by atmospheric influence; and the *Aphis vastator* is not the cause, as many have supposed, but the effect of the disease.

Tadcaster.

A PRACTICAL AMATEUR.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

PANSEY SEEDLINGS (*M. Weighill*).—The yellow with the broad purple edge, is in good form and substance, but common-looking. The pale straw with purple, delicate-looking, and good form, but thin petaled. We cannot write letters at all, much less "by return of post," on such subjects.

BRITISH FERNS (*B. B.*).—Moore's *Handbook of British Ferns* will exactly suit you. It is very cheap, and very full of information.

HOT-WATER PIPE (*J. B. W.*).—For your greenhouse, eighteen feet long by nine feet wide, use three-inch cast-iron piping.

SEEDLING VERBENAS (*Bufo*).—These seedlings vary, more or less, from the parent plants. The *toad* you employ in your frame will become torpid in the winter. We have had Grapes affected with the white mildew (*Oidium Tuckeri*) cured by rubbing them between the fingers and thumb covered with flowers of sulphur.

SHRIVELLED PEACH SHOOTS (*One Puzzled*).—We have seen cases like yours, and feel disposed to consider it a form of mildew, perhaps the *Oidium erysiphoides*. Flowers of sulphur seem to be generally recognised as the best antagonist to mildews in general. Such things are very liable to be generated in damp seasons, on trees growing in rich soils, and this is one of the reasons why we prefer planting in simple loam, and using manurial matters as surface-dressings. We should take such trees up in October, make the soil drier and more simple, and replant at a higher level.

PEACHES AND PLUMS PLANTED TOO CLOSE (*A Country Rector*).—You may prune them back a little closer than in ordinary pruning, before moving them. There is no necessity for such very severe pruning. Your transplanting will bring the gross trees into bearing, if proper sorts, and not utterly diseased. *Rhododendrons* and *Azaleas* want little pruning besides occasionally removing straggling growths; keep, however, all seed-pods removed. Let us advise you to root-prune all your *gross fruit-trees* at the end of September; never mind their flagging a little. You should have attended to our directions about summer pinching long since.

ORCHIDS (*Cattleya Loddigesii*).—You say your *Cattleya Loddigesii* made twelve bloom-spikes, but only one flowered; you kept it in a house heated to 70° by day, and 60° by night, whilst growing, with rather dry air, but moist at the roots. We imagine your soil is too wet, and not raised sufficiently above the pot edge; the heat is right, and the atmospheric moisture is right. It is very surprising that many orchid growers do not succeed in blooming their plants, for it is a fact, there is no class of plants so easy to cultivate if all the proper means and appliances are brought into play in growing them. Consult Mr. Appleby's papers on Orchid culture, in back numbers of THE COTTAGE GARDENER. Why treat *Cattleya crispa* differently to *Cattleya Loddigesii*? They are from the same country. We have seen them bloom in very indifferent treatment. Your *Oncidium pictum* has too much soil at the root. When the growth is finished, keep it dry, and when it begins to grow again in the spring, shake it clean out of the soil, fill the pot half full of the crocks,

and the rest with rough peat and sphagnum. Treat your *Cattleyas* so, also, and they will all be sure to flower.

NAMES OF PLANTS (*Tiverton*).—1. *Pteris serrulata*. 2. *Adiantum assimile*. 3. *Lycopodium cæsium*. 4. *Lycopodium denticulatum*. 5. *Lycopodium apodum*. We have waited some time previously to answering your multifarious questions, in order to procure some certain information on some of them. You ask where the best Wardian cases are to be seen. This we cannot tell; formerly there were good ones, ready made, at Laurence and Co., 55, Parliament-street, Westminster. The makers of these things should advertise. Neither can we recommend nurserymen. Such questions as these—What is the price of Ferns, and where are they to be obtained? must be answered by a nurseryman. Apply to any that advertise in our columns. The window kind of Wardian cases you allude to, would answer for Ferns and Lycopods, but not for Fuchsias or Roses.

SHANGHAE FOWLS (*Ibid*).—There are two opinions as to the comparative beauty of these and Spanish fowls. Many, and we agree with them, think the buff Shanghaes the handsomer of the two. Shanghaes are certainly the better layers, though their eggs are smaller than those of the Spanish. See what is said to-day, in answer to the question—"What kind of poultry ought I to keep?"

PROLIFICACY OF SHANGHAES.—"Some few weeks since, a correspondent gave an account, in THE COTTAGE GARDENER, of the prolificacy of some of his hens. In support of such statement, I beg to add a similar fact that has occurred with me, and may be confidently relied on. I have a cinnamon pullet in my possession which was hatched in August, 1852, and commenced laying early in February, and has continued laying, upon an average, four days out of five, until about a fortnight since, when she began to moult; since that time she has laid every alternate day, without any inclination to sit. The hen is also the best I have, in point of shape, consequently I have bred many chickens from her, hoping they may prove as prolific.—T. J. SALTMARSH, *Chelmsford*."

WHERE TO BUY PLANTS (*An Old Subscriber*).—We know perfectly well where all the plants you want could be bought, quite true to name, also the prices, except one, *Hymenocallis acutifolia*, or Sir Alexander Johnson's Mexican *Pancratium*; but if we were dead to all conscience and reason, and tell you where, we should inflict an injury on many others equally respectable, and entitled to confidence. It is a different thing, when a plant is very scarce, or only in the hands of one man or firm. It is possible that this particular variety of *Hymenocallis* was never in the trade. Sir Alexander received it direct from Mexico, but any of the *Adnate* varieties will grow in a glass, jar, or cistern, that would hold no less than two quarts of water, and the whole bulb may be under water, or not, according to taste or convenience. Thirty years since that *Hymenocallis* was sold at Lee's Nursery, and at Loddige's, under the name of *Pancratium Mexicanum*. Sweet had it at Colvill's, and calls it *Pancratium acutifolium*, in his "Hortus Britannicus." It is also *Acutifolia* in the "Botanical Magazine," volume 53, with a good representation at plate 2621. We have not the least idea where it can be bought now. The Horticultural Society could get it and all this race home by the bushel through their new collector.

ANGLE OF A GREENHOUSE ROOF (*A. B.*).—The "discrepancies" rise from the different ways of applying the quadrant to the rafter. The gardener's angle is not a true angle; they generally take the angle formed by the rafter and the plumb line, and call that the angle of the roof; therefore, their quadrant should be numbered both ways, to show the proper angle, which is that between the rafter and a horizontal line. When you apply the quadrant for finding the gardener's angle, the side with the highest number should stand against the lower part of the rafter. It is all the same for greenhouse plants to be secured by a good working flue, or hot-water pipes; it is only a question of convenience and expense; of course, hot-water pipes are more convenient, and less likely to go out of tune.

WILLIAM ADAMS (*C.*).—Stamps received.

SHANGHAE PULLET (*An old Subscriber*).—This pullet, with "apparently cramp in her claws," we fear is partly paralysed. A small blood vessel has, probably, burst on the brain. Separate her from her companions; keep her quite cool and quiet; supply her with soft, unfattening food, such as boiled and mashed potatoes, and give her a dessert spoonful of castor oil. It will be some weeks before you notice any amendment, if she recovers at all. We lost the grub you found on the Turnips, but we think it was the caterpillar of the Turnip Saw-fly (*Athalia spinarum*). It is fully described in THE COTTAGE GARDENERS' DICTIONARY.

FLIES IN VINERY (*B. L.*).—We know of no mode of excluding them but hanging fine gauze before any opened window.

CUCUMBER FOR GREENHOUSE (*Greenhorn*).—The variety coming quickest to a useful size is the *Short Green Prickly*. Answer to other query next week.

WAX FROM SUGAR.—*A.* writes to us as follows:—"Should '*Pecchia*' furnish the empty hive with comb, as proposed at page 372 of THE COTTAGE GARDENER, perhaps also he would wish much to know the quantity of syrup required to form the combs, and also the dimensions of the hive. In the experiments of Huber, the largest quantity of wax yielded by a pound of sugar was two ounces and three-quarters.

COCKEREL CROWING.—*Mademoiselle* enquires, "What is the earliest age at which a cock generally crows? I have a crossbred Spanish and Golden-spangled Poland cock, hatched June 4th, this year: and the 1st of August I was astonished to hear him crow for his breakfast; so that being only eight weeks and three days old, I thought it a sufficiently remarkable circumstance to trouble you with my query."—Cockerels rarely crow before they are four months old, and usually not so soon. Your's is a precocious fellow. The charge for an advertisement depends upon its length. A short one is 4s. 6d.

SUSPENDED BASKETS, &c. (*Troublesome*).—We are glad that the article by Mr. Fish pleased you so well. As you are so near Trentham, you will have seen how nicely all the Ivy-leaved Geraniums do when so treated.

GLASS-COVERED WALLS AT TRENTHAM (*Ibid*).—There can be no question as to their utility. We saw a house nearly finished at Woburn the other day, for Figs on the wall; and we think Peaches or Plums in fruit. Either for late or early houses, they will answer admirably; one thing peculiarly fitting them for the latter is, that you get rid of the drip, the inseparable attendant of flat-roofed houses.

VINERY AND PEACHERY (*Ibid*).—This, if six feet wide, and ten feet six inches high, with the Vines at the back wall, and Peaches in front, no doubt it will answer; but see your trellis is not higher than Mr. Fleming's. Your wall underground, five feet from the back wall, to prevent the roots mingling, is a capital idea, and will render your success more certain, as you can change and chop without injuring what is left. Width of border—Do not be alarmed; five feet is quite ample; but secure abundant drainage, two feet of soil, and be liberal with surface-dressings and manure-waterings. Think of one thing, however; in such a house you can do nothing with pot plants. Will it suit your lady as well as a lean-to house, in which, after giving Peaches the go-by, you might have plants undergoing a preparing process during seven or eight months in the year; in fact, from the time the Grapes are cut, until they are colouring again? If you can settle that matter satisfactorily, then we would decidedly vote for a Trentham house. You mean the roots of the Peaches to have access to the outside border, as at Trentham.

TAIL OF GREY DORKINGS (*A Subscriber*).—There is great uncertainty in all attempts to breed the Grey Dorkings true to a particular colour, but the tail of the Cock should be iridescent black; if white, indeed, appears in that part of his plumage, it can only be permitted in very small proportion to the former colour, to which our preference, other merits being equal, would certainly be given.—W.

NAMES OF PLANTS (*An Old Subscriber*).—Quite impossible to be certain of the name of your "weed," from such a specimen, but it is probably *Polygonum amphibium*. (*J. M.*).—Yours is *Chenopodium bonus-Henricus*, Good Henry, or Goosefoot, sometimes used as Spinach, and, as in your district, is often applied as a healer to wounds and ulcers. (*Lancastriensis*).—*Atriplex hortensis*, var. *rubra*, Garden Orach, or Mountain Spinach. (*F. W. S., Melton*).—The twisted seed-pod is that of *Streptocarpus Rexii*, and the Marjoram, we believe, is *Origanum Tourneforte*.

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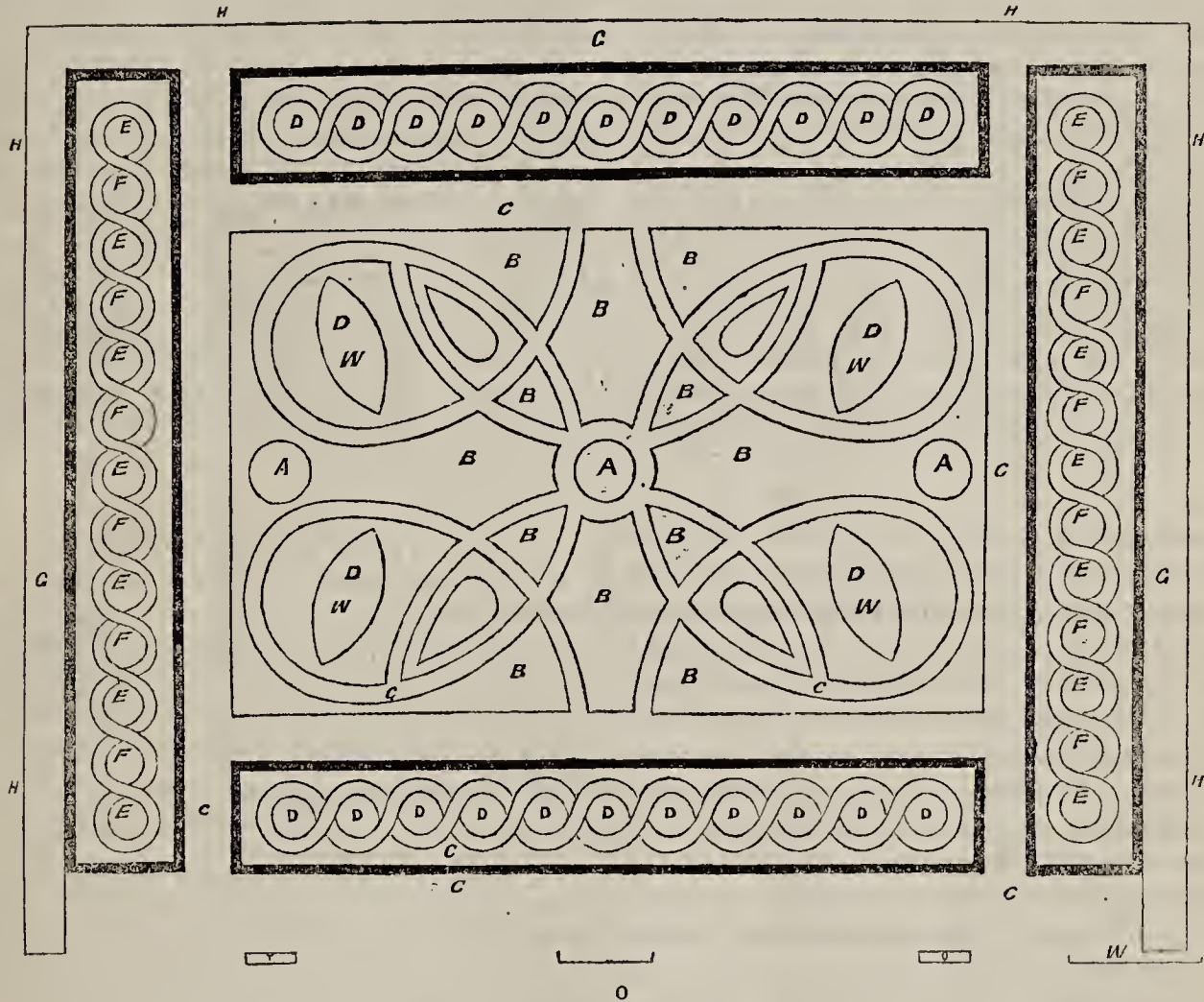
WEEKLY CALENDAR.

M D	D W	SEPTEMBER 8—14, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
8	Th	Flame Shoulder; weedy b.	29.983—29.951	68—58	E.	14	25 a. 5	30 a. 6	8 49	5	2 28	251
9	F	Treble Lines; woods.	29.926—29.859	69—59	N.E.	09	27	28	9 18	6	2 49	252
10	S	September Horn.	29.907—29.822	69—49	N.E.	10	29	25	9 58	7	3 10	253
11	SUN	16 SUNDAY AFTER TRINITY.	29.862—29.826	67—45	N.W.	—	30	23	10 51	8	3 30	254
12	M	Sprawler; paling.	29.925—29.848	68—42	N.	—	32	21	11 58	9	3 51	255
13	Tu	Mouse; gardens.	29.937—29.896	67—46	N.	—	33	18	morn.	10	4 12	256
14	W	Brixton Beauty; trees.	29.947—29.788	63—46	N.W.	07	35	16	1 12	11	4 33	257

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 67.7° and 47.6° respectively. The greatest

heat, 84°, occurred on the 12th in 1843; and the lowest cold, 31°, on the 7th in 1850. During the period 107 days were fine, and on 75 rain fell.

FLOWER-GARDEN PLANS.—No. 9



- A. Fountains.

B. Grass.

C. Gravel.

D. Flower-beds, and D.W., ditto.

E. Irish Yew, or Juniper, with flowers round.
- F. Humea elegans, with flowers round.

G. Border for choice Rhododendrons.

H. Rabbit-proof fence, with edge of Roses, *Jasminum nudiflorum*, and *Mahonia aquifolium*.
- X. Box edgings.

T. Dining-room.

O. Drawing-room.

U. Morning-room.

W. Conservatory.

THE gardener who sent to us the above plan accompanied it with this note:—"I am aware you cannot speak of its adaptation to this, or any other place, unless you were upon the spot; but, perhaps, you would favour me with your criticisms of it, as a plan for the front of a large square house, in the Italian style, surrounded with a beautiful woody country of hill and dale, with a good distant view of the far-famed Malvern Hills. If you think it will be of any service to your readers, you can make what use of it you please. Any remarks in your notice to correspondents will oblige."

Here is an excellent design for an Italian Terrace-garden on English soil, with a bold rap to Sir Joseph Paxton himself, in the conception of the three fountains on the same level, across the centre of the figure. The two end fountains, however, are not quite in the situation where Sir Joseph would place them, for he studied the subject in Italy itself. They ought to stand in the middle of the end

walks, so as to be directly in front of the visitor on entering the garden from the dining-room corner, or the corner by the conservatory. A sharp critic, standing at one of these corners, for the first time, and that end fountain at work where it now stands, would sing out, "Here is a pig with one ear to begin with;" and once the first note of preparation is set on a wrong key, the rest of the plan, or tune, may be thrown out of joint at the will of the wily critic. In defence of things as they are, we might insist on it that the key note starts from the drawing-room window, o, from whence the three fountains are well balanced. Granted; but when we enter a regularly set-off figure like this, the same balance must accompany each view to the farthest corner; everything must be in match pairs, else the principle of regularity, on which the garden is planned, is violated. Beds, fountains, standard plants, Aloes, or any other objects, may be in pairs, or in as many duplicates as there is room for in a terrace-garden, or any garden in

the regular style, and yet each and all of them be placed on a wrong principle after all.

There are only two more violations of principle in this plan, and one of them is very common in the best laid-out places. The first is the four flower-beds, marked D.W.; they are in regular pairs, but their outlines do not correspond with the outlines of the figures of grass in which they stand—an unpardonable offence in the eye of a critic. The smaller beds next to D.W. also on a regular piece of grass, have the larger end rounded—a repetition of the same error on a smaller scale. These beds should have their broad ends nearly squared.

The way of getting from the side terrace-walks to the middle fountain is very good indeed, as it gives an opportunity of dividing your company, instead of “following the rest like sheep,” as is too often met with.

At the middle of the curve behind each of the four beds, D.W., the breadth of grass is too narrow to the principal terrace-walk, and, therefore, too tempting to avoid being made use of to pass across the grass from one walk to the other. This is a very common error, and, in the present instance, it could not be avoided, except in two ways; first, by opening a walk from the centre of the ends of the walks on each side A.A.; and secondly, by having some appropriate edging along the sides of the terrace-walk not lower than a foot or fifteen inches, so as to make it unlawful to step over it, however easily that may be done. Every other part of the plan is exceedingly good.

I know a class of short-frock critics, in “tights,” who could not stoop to pick up their white kids if they had dropped, who would object, at once, to the curved walks all through the centre of this garden; but I have no sympathy for white gloves, except at wedding parties and polkas. Every curve here has its fellow in the opposite part, and

then the principle of regularity is carried throughout, and that, too, in a better style for our English notions than if the most perfect design in all Italy or France were transplanted entire into any of our parks or pleasure-grounds. The four little triangular beds next to and round the fountain need not be in grass, although they are so in the plan.

The chain pattern, which surrounds the whole, is very much approved of by many ladies, and I have seen it in many places, but never heard a word against it. The way the two end chains are planted here is new to me. *Irish Yews* and *Humeas* alternately, with flowers round each, must look very pretty indeed, but there is a good deal of gardening difficulty to be encountered in this planting. Every one of the Yews ought to be exactly either of the same height throughout, or rising in a progressive ratio from the outside corners to the middle; *Humeas* the same, among themselves, but they need not be proportioned to the Yews, as an architect might wish them, although he might not know the growth of one plant from another.

In the four grass plots where beds D.W. stand, there ought to be three beds in each, instead of one, if not four; two angle beds, one in each corner of the plot, with a circle just in the middle between them; if only for some standard plant; but if that is not approved of, nor the walks suggested on each side A.A., the place is open to a half-moon-shaped bed, and the line “between her horns” may be a fancy scroll, if the real shape of a half-moon is an objection.

We now see, in this series, how variedly different minds work out the self-same principle, or rule, that what is very well suited for one place may be the very contrary in another place; and that no mind, be it of the highest order, can ever be so useful in suggestions, as a great multitude of minds, even of every-day run, when they are thus brought in contact for comparison.

D. BEATON.

EVERY profession has a tribunal before which those who adopt it as their life's occupation are obliged to appear, and to receive from that tribunal a certificate that they are worthy of being trusted with the spiritual, physical, or pecuniary interests of those who desire their aid. In England, our Universities, Medical Colleges, and Inns of Court, are the tribunals from whom our clergy, men of medicine, and lawyers, receive their licenses to practice. Whether they efficiently and satisfactorily perform their duties as examiners and licensers, it is not our province to enquire; but this we do know, that they do so far secure those professions from having scandalously inefficient characters among their members, that, when one such is detected, it is wondered and clamoured at as an exception.

This fact suggests that over some other occupations a similar examining and licensing tribunal might be established advantageously; and, among these, the first to arise before us is Gardening.

We consider it quite possible to have a body of examiners incorporated, whose certificate should be the best testimonial a gardener could tender to any one desirous of obtaining his services; but it is not every self-constituted body of examiners whose certificate would deserve, much less command, such influence.

Whilst pondering over this subject, we observed that at Liverpool was formed what is called the *United Gardeners' Registration Society*; and, having applied for further information, we readily were furnished with the following:—

OFFICERS' NAMES FOR 1853-54. — *Chairman*, William Groves; *Vice-Chairman*, William Turner; *Treasurers*, James Hume, John Postelwhaite; *Secretary*, George Thompson.

RULES AND REGULATIONS.

I. This Society shall be called the “UNITED GARDENERS' REGISTRATION SOCIETY.”

II. The object of this Society is to investigate and register the capabilities and requirements of members in want of situations as Gardeners, so that employers, who may honour us with their favours, may readily fix upon the person to suit them, and be put into immediate communication with the same.

III. No person be considered eligible for membership in this Society who is not a professional and practical Gardener, or in training for the same.

IV. Each Gardener, on becoming a member of the above Society, is expected to exert his influence, in a judicious manner, to promote the objects of it, and do all that he can to elevate and protect the profession from being encroached upon by persons of inferior capabilities, who may take upon themselves the duties of a Gardener in connection with some other trade or calling. He must encourage, whenever practicable, the employment of under Gardeners in preference to ordinary labourers.

V. To facilitate the operations of the above Society, each member must give notice to the Secretary when about to leave his situation. If he desires to be placed on the Register, he must forward a statement of his capabilities and requirements, signed by the Committee of the locality in which he resides.

VI. If anything reflecting dishonour or discredit on any member of the above Society be known to another member of the same body, the latter must not hesitate to communicate the intelligence to the Committee, or any member thereof.

VII. The business of the Society shall be conducted by a Chairman, Vice-Chairman, two Treasurers, Secretary, and Committee, consisting of as many as may be deemed necessary for the time being, with power to add to their number when required. There shall be a general election of officers every twelve months, in which the retiring officers are eligible for re-election.

VIII. All documents or property held by out-going officers, in virtue of their office, shall be delivered up to the new officers as early as possible after their election.

IX. Each person, on becoming a member of the above

Society, up to the first day of September, 1853, shall pay the sum of sixpence, for which he will receive a copy of the printed Rules of the Society; but after that period there will be charged a Registration fee of two shillings for a head Gardener, and one shilling for an under Gardener, in addition to the price of the Rules.

X. All members, who receive situations through the efforts of the Society, shall pay to the funds of the Society as follows:—For the situation of head Gardener, if his wages do not exceed twenty-two shillings per week, the sum of five shillings; if twenty-three shillings and upwards, the sum of ten shillings. For all under Gardeners, the sum of two shillings and sixpence.

Not willing to rely upon our own unaided judgment, we applied for an opinion to a head-gardener, upon whose clear-sightedness, and long connection with the employment, we place great reliance. The following is his very just reply:—

“Many men of honourable feeling would desire that something were done in this direction, and yet cannot see their way clearly. I have had something to do in kindred matters; and it grieves me to say, that hitherto gardeners have been too envious, narrow-minded, or selfish, to guarantee success to any object emanating from, and conducted by, themselves alone. I do not, by any means, think that the present plan of filling gardener's places is at all like perfection; but yet I do not think it has sent more unsuitable men to places than the proposed one would be likely to do. The best places are now filled by applications to gentlemens' gardeners, or to first-rate nurserymen, both of whom take a trouble in investigating matters, so as to secure, as far as possible, their own character for fidelity and discernment. Even under such a Society, the matter, at length, must be left with an acting secretary. The great advantage to such a system, to all minds of independent feeling, is, that you would pay a stipulated sum on receiving a place through them, while, in the case of a nurseryman, unless something of the same sort were done, you never know when the obligation of gratitude should be considered as discharged. The prospectus seems to go no farther than the registry at Mr. Week's, and, perhaps, not so far as the qualification-paper of the firm of Knight and Perry. I had my doubts of the propriety of some of the last gentlemens' tests; inasmuch as I saw that it was wholly an employer's question, every care being taken to obtain a good gardener; but nothing whatever to secure that deserving man a good master; whilst the implied refusal of the firm to give their countenance to those whose late employers did not satisfactorily sign a qualification-paper, might easily be turned into an instrument of wrong. I only gave up the idea of noticing these matters publicly, when the firm told me, that when a qualification-test could not be obtained, they would be satisfied with the verdict of several of the best gardeners in the neighbourhood. Now, this seems to be the principal object of the *Registration Society*. There is nothing at all of the nature of a trade protection society mooted; and yet I fear that the employers of gardeners would be too apt to look upon it as such, and, therefore, would sooner see such a registry in the hands of neutral persons, or in that of a tradesman,

than in that of professional gardeners. Besides, the Society seems to go on the assumption that places are filled by unsuitable persons; but I have always found that really good places are generally occupied by men of fair professional reputation, and that the causes of discomfort too often lie deeper—namely, in moral conduct—than such a Society can well attempt to cure. I know not of one uncomfortable collision, but other matters than gardening were generally the cause.

“Wishing to act in a straightforward, independent manner, I would, however, sooner pay a trifle, than incur a lasting obligation. But let us just cursorily enquire, if the prospectus before us is all that is wanted.

“1st. *It should unhesitatingly command our confidence.* But where has the Society met? Who constituted the committee? Who are the committee? The names of most of them are known to me, and all known honourable men; but we have often more than one person of the same name; then why withhold the full address of the committee, with a preamble as to when and how constituted, and the address, for further information?

“2nd. *The title of the Society should be suitable.* Then what is the use of the word *united*? Many knew the ill-effects of the title of the ‘*United Gardeners' and Land Stewards' Journal*,’ though started for a truly benevolent object. There is much ‘in a name.’ The very word *united* kept gentlemen from patronising it. Visions of tenure clubs, united Irishmen, &c., floated through their mind, and they left the concern to sink; as many gardeners, though professing adherence to the object, allowed it to sink, so far as the primary object was concerned. Will it be believed, that the very class to be benefited became the most callous. Preserve this name, and no prophesy is needed to chronicle the number of applications for gardeners.

“Now for a few comments on the Rules:—II. Treats of investigating and registering the capabilities of gardeners. This is done already in many establishments. How is it to be done better?

“IV. Has reference to protect the profession being encroached upon by pretenders. But will not this smack a little of the tenure club, that would attempt to regulate free trade in labour? Also, he must encourage, wherever practicable, the employment of under gardeners, in preference to ordinary labourers. Now, have the framers thought of this in relation to social economics? Why are there so many gardeners wanting places, even now, when most trades are brisk? Is it not because the supply greatly exceeds the demand—and what is the remedy? Increase the blue aproners; employ none but young gardeners, to bring down still farther the wages of a good gardener in the market; and because for every good place there are so many candidates, it is desirable to have still more. I would reduce the number of gardeners, by making it more difficult, in a pecuniary view, to be got. The striking young gardeners by cuttings, as it were, as they do in some parts of the north, employing scarcely any but apprentices, has overstocked the trade. In many parts of England we may have some trouble with labourers, but we do

not bring down our profession by overstocking it, nor belong to an institution that says, we *must*, in this respect, run counter to the wishes of employers, to give labour to the people among whom they live.

"VI. If one member knows anything to the discredit of another member, he *must* not hesitate to communicate the same to the committee, or any member thereof. Now, as I said, we must thoroughly know all the antecedents of men to whom we would give a power like the Inquisition, on the one hand; and yet, we fear, not strong enough to protect us from such a thing as the law of libel, on the other.

"The other rules relate to the management, money to be paid, &c.; the latter seeming to be too low to defray expenses, unless the demand for places was very great. In a private note, the secretary speaks of the Society as a means of elevating the gardening profession; and, that 'we mean to have local visiting committees, and be, as it were, personally acquainted one with another.' And how is this friendly visiting to be conducted? on the *water* system, or the free-and-easy mode? Company, be it remarked, having proved the bane of many a good gardener. There is a good idea in the concern, but I cannot see how it is to be carried out; and I should like to see it ventilated before it receives an unconditional approval in THE COTTAGE GARDENER."

THE comments we made some, few weeks since, upon the erroneous ages asserted to be those of some of the chickens competing for prizes at our poultry exhibitions, has thrown a spark upon a train which we hope will lead to the utter explosion of a practice so inexcusable, even if only the result of carelessness. It is inexcusable, because it leads to injustice. If birds really only four months old are equalled in size, as well as other points of merit, by other birds falsely stated to be fourteen weeks (though, in reality, they are four-and-a-half months), the latter would receive the prize, though, if their true age had been acknowledged, that prize would have justly been awarded to their competitors.

To aid our readers to some guide by which they may avoid being deceived by ages erroneously reduced, they may take as a rule, that a *Shanghai Cockerel* or *Pullet* never weighs much more than one pound for every month of age until they are about eight months old. Confirmatory of our statement, is a letter just received from a correspondent, whose address we have, but who adopts the masquerade one of "ROSEA." He says:—

"I quite agree with Capt. Snell, of Norwood, as to the age of chickens, or the age represented by the owners.* On the 13th inst. (August), I saw a buff cockerel (which was purchased at Yarmouth) weighing over 7lbs.; age guaranteed, fourteen weeks. I herewith send you the weight of three birds, from Punchard eggs, hatched

the 11th of April last, and are considered to be fine birds.

		lbs.	ozs.
Cinnamon Pullet		4	5
Partridge do.		4	4
Dark Cinnamon Cockerel, weighed the			
20th of June, age 10 weeks		2	6
27th " 11 "		2	13
4th of July 12 "		3	3
11th " 13 "		3	8
18th " 14 "		4	2
25th " 15 "		4	7
1st of August 16 "		4	13
8th " 17 "		5	0
15th " 18 "		5	2
22nd (this day) 19 "		5	7

"This may be a guide to amateurs who are about purchasing stock. It will show them that birds at ten, eleven, or twelve weeks old, are not likely to weigh seven or eight pounds each."

To check the insertion of an erroneous age, every loop-hole for the admission of plausible excuse should be taken away, and to this end, the following letter from a gentleman at Malvern contains some very useful suggestions:—


"I am glad to see that attention has been called to the fact, that the ages of chickens exhibited at the different shows have not been stated, in all cases, correctly.

"I, in common with Capt. Snell's friend, have felt that—'if the owner were to swear they are not older, I could not believe him.' But I think the public are not altogether to blame in the matter, and that the negligence of the committees and secretaries of the different shows is the main cause of the grievance. For instance—I will fly at high game, and take the late Metropolitan Show, in Baker-street (and I think the Birmingham one might also be included)—in no one of their advertisements, lists of prizes, certificates of entry, or under the head of regulations, as far as I have been able to see, was the day stated up to which the ages of chickens were to be reckoned; consequently, one may have entered his birds a month before the closing day, and given the ages they were on that day. Another, more experienced, may have reckoned the age his would be on the first day of the show, and stated that. In the absence of any positive instructions, dishonesty cannot be attributed in all cases.

"I do not know whether they have taken means to have the ages of chickens stated more correctly at the Surrey Gardens Show, but they have in this town, and I think their certificate of entry meets the case as far as possible. (I will enclose you one.) It appears to me that the exhibitor's honour is the only security you can have. Another step in the right direction has been made by the Malvern Committee—the giving of £10, in different prizes, to the cottagers, whose rents are under £10 a-year, for the best pens of Fowls, Chickens, Geese, and Ducks."

* Some one has taken the trouble, from what motives we care not, to inform us that Capt. Snell is not entitled to such a military designation. We happen to know the contrary, and that he is the author of a meritorious work on the "Theory of Military Manœuvres."—Ep. C. G.

The Malvern Certificate of Entry is this:—

 This Certificate must be filled up and returned before the 5th of September.

MALVERN POULTRY EXHIBITION,
1853.

CERTIFICATE OF ENTRY.

CLASS.	DESCRIPTION.	AGE. On the 20th of Sept.*	PRICE.

I hereby certify that the _____ entered above, are bona fide my property, and of the age stated.

Name of Exhibitor, _____

Address, _____

All Specimens must be delivered in the Gardens by 7 p.m., on Monday, the 19th of September.

To Mr. Thomas Davis, Hon. Sec.,
2, Holyrood Terrace, Malvern.

* The day they are judged.

No language is too strong with which condemnation could be hurled against those Committees of Poultry Exhibitions which are careless as to the immediate return of the birds confided to their care. We have already spoken warningly and strongly upon this subject; and now we have "another and another" instance, claiming, as deservedly, that the wrong should be proclaimed, and warning again uttered.

We are as anxious as any of the public to sustain Poultry Exhibitions, but, if subjected to such mishaps, fall into dissuetude they must; for no owner of valuable fowls will run the risk of their being subjected to such ill-treatment, for ill-treatment it is to have them penned up for so many days, with an entire uncertainty as to their feeding and roosting. Upon the reprehensible inefficiency of the arrangements at the Surrey Zoological Society's Show to protect the poultry from the inclement weather, we have heard most grave statements, and we should not be surprised if the fowls complained of in the following letter, as missing, really died there, from the consequences of such exposure.

If Committees are not scrupulously careful to avoid such cruel errors, we repeat, that Poultry Exhibitions will decline into total disuse, for no one will send to them valuable poultry, and no one will go to look at those which are merely second-rate. The only alternative will be for exhibitors to require a guarantee, with a penalty assigned, from the Committee of each Exhibition, that the birds shall be delivered at a certain place for conveyance on a day named.

The writer of the following letter is the owner and exhibitor of birds that have taken more prizes, we believe, than the birds of any other exhibitor:—

"The signature which I attach to my letter will remind any of your readers, who have visited Gosport, of the words by which the boatmen there intimate their readiness to take a boat-load of passengers across to Portsmouth.

"It is said (I believe, with truth), that these naval worthies no sooner see a soldier approaching (likely to prove a passenger), than they assail him with cries of 'Now, gallant Serjeant;' 'Here, noble Captain,' 'step on board,' 'just going across,' &c. But when once the victim is secured, and his penny pocketed, than he is told (if he ventures a remonstrance at not 'shoving off') 'to sit down and be — as a lubberly lobster.' (The space not being filled with a blessing.)

"Now, I am really beginning to think that we poultry exhibitors are very much like the poor innocent recruits; while the boatman is well personated by the Secretary of 'The Great Annual Timbuctoo Poultry Association.'

"To induce us to send our fowls to the show, no persuasions are wanting. 'Such feeders,' and 'accommodation,' and 'such choice of food,' are provided, as even the poor dear fowls themselves never dreamed of. 'Such arrangements' have been made, to restore the fowls to their (as in my case, and Dr. Gwynne's) desponding owners, 'when the show is over, as must please.'

"The trap is well baited. No difficulty occurs in getting the fowls into the Show, but to get them out, is quite another thing; and if the unfortunate owner ventures to complain, he either gets no answer, or is civilly told that he is finding fault most unreasonably.

"I forget how long Dr. Gwynne was kept waiting, but I have a letter to-day (August 28), from a friend, to enquire 'whether I have yet got my birds back from the London Poultry Show, as he has not?' Luckily, I have got mine; but I cannot say the same as regards those at the Surrey Zoological Garden Show.

"This was over on Thursday evening (August 25), and there can be no reason why (if there had been anything like common management) every exhibitor in England should not have had his poultry safe at home on Saturday morning, but up to this time (Sunday night), August 28th, I have not got my birds.

"I do not think this is entirely the Secretary's fault, though, of course, everybody blames him. But even Mr. Catling, with his imperturbable good temper, and untiring energy, has only one head, and one pair of eyes. The fault is, in there not being a committee responsible for the early removal of the different pens. If proper arrangements had been made beforehand, every pen might have been cleared away by eight o'clock on the Friday morning.

"But the worst part of the thing is, that the Secretary seems the only person to attend to everybody, and he thinks that when the soldier is once in the boat (that is, the show is well filled with choice poultry), his duty to the exhibitors is to give way to looking after the interest of his employers.

"That 'ten or five per cent.' charged on the sales must be looked after; and 'filthy lucre' is much more considered, than a speedy restoration to Mr. Snook's, of Snook Cottage, of his prize pen of white Cochinchina chickens.

"It is the system I find fault with, not the individual. I dare say Mr. Foster did his best, and did it as well as any other Secretary; but the proof of the pudding is in

the eating. My poultry left *me* a week ago. I ask where are they? and echo answers, '*where*.'

"The evil speaks for itself, more especially now, when old birds are mere or less weak from moult, and require more care. I hope you, or some of your many readers, may be able, not only to point out, but to insist on, a better system. As it is, great discontent on this point prevails, and I am quite sure, that unless a change takes place, the most persuasive Secretaries may find that exhibitors have become '*old soldiers*,' and are not to be tempted into the boat, however civilly their tempters, the boatmen, may cry out—

OVER! OVER!"

PART of the stock of fowls belonging to T. H. Potts, Esq., of Kingswood Lodge, near Croydon, were sold by auction by Mr. Strafford on the last day of August, and realised prices which are evidence of no depreciation of the value of this description of live stock. There were 130 lots sold, and the gross sum paid for them was £301 11s.

In *Shanghaes*, Lot 21, buff cockerel, purchased of Captain Snell, £5 10s. Lot 27, Mr. Andrews' well-known imported hen, weight, when in condition, 11 lbs., £17 17s. Lot 30, silver cinnamon hen, Annie, bred by Mr. George, and a taker of many prizes, £18 18s. Lot 31, buff cock, Orson, also a sharer in several prizes, £22 1s. Lot 32, silver cinnamon hen, match bird to Lot 30, £16 16s. The cockerels and pullets of any merit fetched prices varying between one and four pounds. In *Golden Polands*, the cock sold for two guineas, and the best hen for £1. In *Silver Polands*, the cock sold for £1 7s., and the best hen for £1. In *Spanish Fowls*, the cock (Lot 121) sold for £5 15s., and the best hen (Lot 122) for £3 5s.

THE PERSIAN CYCLAMEN.

THE rapid decline of the season at this period forcibly reminds plantmen, that although the mind has been almost satiated, at times, with rich colours through the summer months, both in-doors and out, yet that a dormant season awaits them, when every little addition to the stock of winter-flowering plants will be hailed with delight.

Our readers are aware that most good gardeners cultivate a distinct section of winter-flowering things, and that such require special treatment; and amongst these our present subject, the *Cyclamen Persicum*, introduced, according to "our Dictionary," from Cyprus, in 1731.

Most of our friends are acquainted with this charming flower, but, for all this, I will venture to affirm, that not one in a score of them have the most remote idea of the beauty this plant can be made to attain under the very highest order of culture.

To point to its merits were almost superfluous—its neat and dressy habit; the singularity and special character of its foliage; its long period of blooming, and that, too, in the dull season; together with its delicious fragrance; all conspire to ensure it a welcome where highly cultivated. As to its fragrance, and style of blossom, these will ever secure it a place in the neat

bouquet; and I wonder much that it is not much more extensively cultivated for the supply of our markets.

I think it was the late Mr. Willmot who first discovered, about twenty-four years since, that its previous culture had been very imperfectly understood; that it had been regarded too much in the light of an ordinary bulb; and that it by no means required so decided a rest as most of that portion of the vegetable world. In those days, they might be seen in April or May almost devoured by aphides, potted away out of sight on some neglected shelf, the foliage perishing prematurely through sheer neglect. This plant is peculiarly liable to the attacks of the aphid, or plant louse, and fumigation should occasionally be resorted to, especially whilst the new foliage is starting, and before the blossoms expand.

The Persian Cyclamen is readily produced from seed; but it must be borne in mind, that although the seed is saved from highly-scented kinds, not all the produce will be equally fragrant.

To begin at the beginning, I must beg to detail the practice of raising and nurturing seedlings. The seed of the Cyclamen is a most curious production; immediately on the heels of flowering, the seed-stalk withdraws itself from public gaze, and lies half-coiled, snugly around, or by the side of the crown or corm, as the root is called. Here they lie in little round balls, somewhat like Potato-apples, only smaller, for many weeks, when the sly little rogues will all of a sudden burst, and sow themselves, if not watched closely. The moment the seed-balls are about to burst they must be picked, and also sown, for there is no occasion for much ceremony, except that it will be well to let them lie a few days, in order that they may burst their bonds by a natural process. Their seeds will be ripe, usually, in April or May, and a seed-pan should be most carefully preserved for them, as they will not benefit by transplanting during the first summer.

The Cyclamen enjoys much fibrous, vegetable matter, containing a liberal amount of sand; and if I were to pick a compost for them, it would be fibrous and sandy heath soil, a year old, chopped to atoms, two parts; leaf mould and manurial matters from old hotbed linings, one part; and a free and light sandy-loam turf, one part; the latter a year old, and chopped very fine, as the heath soil, but not riddled. On this heap I would throw a little of my charred rubbish, and add silver sand in proportion to the requirements of the compost. But, as Mr. Fish well observed, the other day, chopped turf from our road sides, such as may be often found, containing much vegetable remains, and the debris of the road, would, perhaps, grow them equally well, and would, assuredly, in the main, prove a safe compost.

The seed-pan I prepare as follows:—One seven inches deep, by about nine in diameter, is cleverly crocked at the bottom, which has several holes. Charcoal, in about half-inch lumps, is strewed over the crocks in a half-negligent way, and a mixture of broken lumps of sandy heath soil and leaf mould, not half-decayed, covers the former drainage to the depth of an inch or so. Over this is placed the compost, which is riddled tolerably fine, and composed as suggested for general culture. The whole is pressed down tolerably firm, so as not to settle any, and the soil being rather dry bears pressing.

The seed is carefully covered, and pressed close, the seeds just out of sight, and then the surface is covered with sphagnum moss, to supersede the necessity of much watering, and of capricious alterations of drought. The pan is now placed in a warm corner of a shelf over some flue or pipes, and will require light sprinklings about twice a week. The young plants will begin to appear in about five weeks, and the sphagnum must be removed immediately. Nothing can be done during the first summer's growth, but to grow them clean, and to

water regularly, but lightly. When these bulbs are repotted, in the following February, it will be found that they have struck their delicate fibres into the drainage material liberally, and much time will be gained by their rapid increases of strength in the coarse medium below. Nothing would be gained by potting-off or pricking-out, as it is termed, but the contrary; and hence the propriety of so constituting the soil in the seed-pan, as that no derangement of its particles can possibly take place. In all *Cyclamen* culture, every care must be taken to avoid the earthworm.

These seedlings will go to rest about November, and may be put on a cool shelf, and kept dry until the following February; not, however, quite dried up as a bulb. About that period, the bulbs, or, rather, corms, must be potted in single pots,—the kinds called 60's, or three-inch pots; and towards May, when they are filled with roots, they will, if well-handled, require a shift into 48's, or five-inch pots. I need add little farther about compost, except to observe, that, as in other pottings, as shifts increase in regard of size, in like manner should size increase in the particles of the compost. These newly-potted seedlings then must be placed on some shelf in-doors, close to the light, and receive most kindly attention constantly. As to heat, nothing more is necessary than a comfortable structure, where extremes of heat and cold are alike unknown. By the ensuing autumn they will be strong corms, each possessing six or eight strong leaves; and these, about September, will evince a disposition for a partial rest, and they may be allowed to enjoy it. Again then withhold water for awhile, or, perhaps, I ought to say, give them a little grudgingly; for as far as my observation goes, the *Cyclamen* root ought not to shrivel up, although the leaves will necessarily assume a shrivelled condition. Towards the middle of February, or sooner, these two-year-old corms will shew flower; and the moment the flower-buds are seen to be forming, a slight increase must take place both in heat and moisture. These young aspirants will produce about a dozen or so flowers this season; but in the next autumn, they will, with the best of culture, produce two or three scores each at least. I may here observe, that the corms, in the month of November of the seedling year, should be about half-an-inch diameter; in the November of the second year, they will be more than one inch; and in the third season, they will be nearly three inches. They will, under good culture, continuously increase; but after they become six or seven years of age they become more sluggish, apt to rot, liable to take very long slumbers, &c., until at last it is scarcely possible to awaken them. I really cannot say how long a Persian *Cyclamen* might be kept a-going, but it becomes the *Cyclamen* man to raise fresh seedlings about once in three years, at least.

I now revert to the management of the two-year-old plants, from which we have but just parted, in the condition of blooming. After flowering, the foliage will, perhaps, appear rather the worse for wear; never mind this: we must now see if we cannot apply the course of practice first pointed to by Mr. Willmot, as before remarked. It is now some twenty years and more since I first tested Mr. Willmot's plan; I used then to grow excellent *Cyclamens*. Having proved that Willmot was right, I, to use a Manchester phrase, "put the big pot on." I raised a famous batch of seedlings, and these, with the addition of a few very good old plants, set me up in this business. The old plants I at once worked on in the Willmot style, and the young ones I coaxed up to the flowering point.

I must now state how I carried out the Willmot idea: I hope I am right in the name, for I write from memory alone. The plants being past blooming, the leaves somewhat sere, perhaps, and the season advanced,—say

the middle of April,—a bed was prepared in one of the warmest parts of the kitchen-garden, on a dry bottom. A few inches of half-rotten leaves were dug in roughly; no "pointing," or making fine the surface. Over this, a compost was levelled, nine inches in thickness, of the very soil *Cyclamens* love, viz., sandy loam, heath soil, and half-decayed hotbed linings, the latter containing dung in the mixture. This, thoroughly blended, after being spread, was compressed with the spade, and in this the *Cyclamens* were planted, with their balls of earth entire, the soil being pressed firmly to them sideways. I ought here to observe, that previously to planting them out they were subjected to fumigation, for they almost invariably become infested with aphides by the time they are exhausted by hard blossoming. After this they were merely kept free of weeds, and watered when dry; and, by the end of August, these stout corms would begin to form scores of blossom-buds. At this period they were potted; and if good practice had been pursued, wide-mouthed pots become requisite.

I suppose I have been what some persons would, in a hasty fancy, term a revolutionist, for I have been in the habit of breaking through the conventionalities of our potters. I never could discover why we are forever to be men of 60's, 48's, 32's, and 24's, especially seeing that no act of parliament infringes on this question. A well-grown *Cyclamen*, like a well-grown cluster of *Achimenes*, requires what our gardening gents term a pan, or, as we generally find it characterized, "a seed-pan."

A pan for a very strong specimen should be barely seven inches deep, by nearly nine in diameter; nothing looks worse than to see a plant, lone and tufty in character, stuck in a tall and narrow pot. Moreover, in deep pots the drainage is more apt to become deranged. About the end of August, then, they may be potted, great care being taken over the drainage, and, henceforth, they will require to stand on some comfortable greenhouse shelf, near the light; if over a flue or pipe, so much the better, unless the heat be very strong. They will require regular waterings, moderate at first, but advancing with the increase of foliage, and by November they will be beautifully in blossom, and continue so through the winter. If a long succession is required, some may be kept back in a cool frame, for they will endure half-a-dozen degrees of frost tolerably well if kept hardy previously.

Thus, then, may proceed their culture annually; and these who have been accustomed to starve them in pots will be surprised at the freedom and vigour of the fibres when they repot them from the open bed.

Those who are commencing this kind of culture should be particular in selecting highly fragrant kinds to breed from. There is a spurious kind abroad, having poor white flowers, quite scentless. The best way will be to purchase when in blossom. R. ERRINGTON.

BULBS.

(Continued from page 400.)

IRIDS.

The remaining genera of *Irids*, usually called Cape Bulbs, are less generally known and cultivated than these treated of in my last paper; yet, as some of them come home in all the collections made up from Cape Town, I group them here together for more ready reference, and to point them out, now that it is time to prepare them for potting.

GEISSORHIZA.

The bulbs, or bulb-like roots of this genus are small—all of them produce but four leaves to the plant, and the flowers are very pretty. Their culture is exactly the same

as that of the smaller *Ixias*; that is, five or seven of the roots are put in a No. 48-pot, in a soil of two-thirds good rough peat and one-third sand. They are too small, and apt to be lost in an open border outside, so that they are seldom treated but as pot plants. Any time in October will do to pot them, and a cold frame will do to winter them. They require very little water till the leaves are three or four inches high.

GEISSORHIZA OBTUSATA.—One of the best of them, and a very pretty flower; cream-coloured, and streaked with pink lines or veins on the outside. It is usually met with in shops where they sell *Ixias*, and is well worth having in a collection of the tribe.

GEISSORHIZA VAGINATA.—This is the next best, and will be preferred to the last by some. It is the strongest of the genus that are good for anything. There are three colours in the flower; the bottom, or eye, being dark purple, then a soft yellow middle, and the tips of the segments, or six divisions of the flower, are marked with a large dark blotch.

GEISSORHIZA SECUNDA.—There are three varieties of this; two are white, and one blue. The blue is the best, and is the only one of the three that is the most likely to be in the trade. It is a sky-blue, and a rather delicate plant; but it is as old and as well known as *Ixia crocata*, and is reckoned the best blue flower among the *Ixias*.

GEISSORHIZA EXCISA.—White flowers, rather small and somewhat mottled; a very distinct species.

GEISSORHIZA LAROCHEI AND SETACEA are the only other two worth potting. *Setacea* is of a sulphur-yellow in the flower; and *Rocheana*, or *Larochei*, is a very curious little thing, with variegated flowers, which formerly went by the name of the "*Plaid Ixia*."

STREPTANTHERA.

There are only two species known in this genus, but these are extremely beautiful, and more hardy than the common *Ixias*. They are from somewhere in the interior of the Cape Colony, but I never learned from what part. It is questionable if they can be bought here at all, for few people knew how to grow them when they were introduced, and I recollect when they both first came over. They will only grow well and last out in a compost of two-thirds sandy loam and one-third peat with a little sand. The great mistake with them was placing them in sandy peat, which suited the swarms of little bulbs found down near the coast. If these beautiful flowers had come to us first from Mexico, or Peru, we have them now as common as any of the *Ixias*, because few good growers like to give much peat, or hardly any, to small American bulbs. The anthers twist round the style in these flowers; hence the name.

STREPTANTHERA ELEGANS.—One of the most beautiful of Cape bulbs, with large *Ixia*-like flowers. The main colour is snow-white, but at the bottom each of the segments is richly marked with a velvety blotch of purple, reddish-brown, gold. In our *DICTIONARY* it is inadvertently stated that this genus had lapsed into *Gladiolus*. There is no affinity between the two families, further than they belong to the same order.

STREPTANTHERA CUPREA.—A coppery tinge in the flower is the only difference between this and the preceding. They flower at the same season as *Ixias*; that is, from the middle of April to Midsummer; and I should think they might be got somewhere in the colony, as they are such marked flowers, that shepherds could find them from the description of *elegans*. At all events, they are not found within the range of the Cape Town collectors, as I never heard of one of them coming home through them.

SPATALANTHUS SPECIOSUS.

Whether this is really a truthful genus of itself, or whether the plant belongs to *Trichonema*, no one can

now say, for the plant has been lost more than twenty years, and has never appeared in any collection from the Cape, that we know of, from that day to this, so that it is supposed to be native of some place far away in the interior. I have heard, more than once, that it was growing not very far from Cape Town, down near the sea, to the north-east; but it is difficult to believe that any one interested in plants could pass it in flower and not wish to have it. It is fully as handsome as *Streptanthera elegans*, and produces abundance of flowers that are bright red, marked with a star of yellow and black in the bottom. The flower is nearly transparent, and there are three or four straw-coloured bands, or stripes, on the outside, and they shine through the red on the inside like gay ribbons. This, also, ought to be diligently sought out. It flowered with us later than the *Ixias* in July and August; and the probability is, that it likewise would require more than half loam in the compost; but of that I am not quite so sure as I am with the *Streptanthers*.

All the *Trichonemas* do very well in loam. Indeed, the little Italian *Trichonema Columnæ* flowered with me, last spring, in an open border that would grow *Canli*-flowers; and as this *Spatalanthus* differs very little indeed from *Trichonema*, the probability is that it should have more exposure than *Ixias*, and a light sandy loam without any peat. I am quite certain that the best peat is rank poison to a great number of delicate bulbs. Peat and leaf-mould have been the ruin of English bulb-growing for many-a-day. If you are in doubt about any delicate, rare bulb, put it into pure sand for a while, till you learn more about it. I never knew a bulb yet refuse to grow in sand for a while. Just pot a few of the best early Hyacinths in silver sand, and if they do not blossom as well as they ever did before, never try the experiment again, nor believe me, even when I tell the truth.

TRICHONEMA.

This name means *hair-like filaments*, in reference to the hair-like stamens. The leaves are equally slender in proportion, and you might take a cluster of them in the spring for a bunch of some kind of wiry grass. There is only one flower on a scape, and it is the same with *Spatalanthus speciosus*, but the scapes and flowers are numerous. Some of this genus are natives of the south of Europe; and one of them, *Celestium*, is from South Carolina, in America.

TRICHONEMA BULBOCODIUM.—This is a very old and well-known hardy little bulb, which flowers a little after the spring Crocus, and it requires no more care than that does. The flowers are purplish, and so heavy that they bend the stalks to the ground; therefore, when they first rise, the little tuft ought to be staked by thrusting down three small sticks triangle-ways, and running a thread from stick to stick. This will show the flowers much better than letting them peep up from the surface of the border, as we often see them. It is a native of Spain and Italy.

TRICHONEMA ROSEUM.—A very pretty little Cape bulb, with dark crimson flowers, coming in June and July, and with very long grass-like leaves. It will do in peat and sand, like *Ixias*, or in sandy loam alone. In other respects treat it as *Ixias*.

TRICHONEMA SPECIOSUM.—The flowers are light carmine, and come early in the spring, on very slender grass-like stalks, before the leaves. It requires the same treatment as the preceding.

TRICHONEMA CAULESCENS.—A very handsome summer flower; bright yellow, with a metallic lustre.

TRICHONEMA PURPURASCENS.—A neat little purple flower from Naples. This and the following are quite hardy in a light border. They are fit associates for *bulbocodium*.

TRICHONEMA COLUMNÆ.—A nice lilacy-purple flower, said to be a cross-bred plant raised in Italy. It is quite hardy.

TRICHONEMA CELESTIUM.—This is all but lost, if not lost altogether. It was the rarest bulb we had at Altyre, near Forres, in 1827, and I have not seen it since. It comes early in the spring, along with the Crocuses, and, like them, flowers before the leaves. It is a bright sky-blue flower, and lasts a long while; is perfectly hardy, and ought to be re-introduced. It is a native of South Carolina, growing there with the *Atamascolily* (*Zephyranthes Atamasco*), and anybody might send it over if there was a call for it. There are several more of them natives of the Cape, but I think they are out of cultivation. I had a nice batch of *Columnæ* from Mr. Sims, nurseryman, at Foot's Cray, in Kent, the spring before last, and I think he has all the hardy ones, at least.

WACHENDORFIA.

If anybody doubted that some of the little Cape bulbs would prefer sandy loam to peat, let them try any of this genus, and they will find they will grow very freely in loam that is rather less sandy than is generally used; but they are not true bulbs, although they always come home as such. Their flower scapes branch out into strong panicles of showy flowers, very unlike the way most other bulbous and tuberous-rooted plants show their flowers.

WACHENDORFIA PANICULATA.—Although this may be had in every bulb shop, and is all but hardy, and as gay and beautiful as any flower can be, no one asks for it out of a hundred, merely because the plant is not generally known. It is one of the deciduous ones, and requires rest after flowering, like *Ixias*, and to be potted in October, like them. It blooms in great abundance in July, or earlier; and the flowers look at a distance like some gay Wallflowers.

WACHENDORFIA HIBBERTI, not *Herberti*, as it is often called.—This is also deciduous, and is related to the preceding. It has pale yellow flowers on close lateral racemes—panicked, in fact. The leaves are very long for this genus. It requires the same treatment as the last.

WACHENDORFIA BREVIFOLIA.—This is an evergreen, and requires to be kept watered all the year round, and for not knowing this many lose it the first year. It has a large panicle of curious dingy-coloured flowers, but is well worth having, nevertheless.

WACHENDORFIA HIRSUTA.—Hairy all over. A deciduous plant, with flowers not unlike those of *paniculata*, but fewer, and not quite so gay.

There are many other species, but they are not so common, or so suitable for placing along with a collection of bulbs.

WATSONIA.

All the species of this genus are gay-looking things. Some of them are as tall, or taller, than common *Gladioli*, and all of them are as hardy as the new *Gladioli*. They are better fitted for growing out in open borders, in front of walls, or houses. Formerly, and before the *Gladioli* became so general, these *Watsonias* took their places, but now we see less of them; still, they are sent home in all collections from the Cape. They are the most uniform in form and colour of all the Cape genera, the flowers being some tinge of pink or flesh colour, with a little white, in some few species. They will grow in peat borders, but they do not require any peat, as a general rule: good, rich, light loam, or the same compost of loam, leaf mould, or very rotten dung, with a little peat and sand, as they mix for the *Gladioli*, will do very well for them. The different species flower from May to October, and generally keep on their strong, stiff leaves till killed by the frost.

WATSONIA FULGIDA.—One of the most stately of the genus, rising three or four feet, and producing long spikes of bright reddish-pink blossoms, which hold on a long time. This, and also the tall ones, are very thirsty, and require large doses of water in summer, unless the bed is rich enough for Cauliflowers.

WATSONIA MARGINATA.—This is the next tallest of them, and there is a variety of it called *minor* equally tall, but with the flowers not quite so large. The flowers are of great substance, light pink, and bloom on to the end of the season if the bed is kept moist.

WATSONIA MARIANA.—A very common one in the shops, with thin, broad, *Gladiolus*-like leaves, and flesh-coloured flowers.

WATSONIA ROSEA.—Much like the last-named, but redder in the flower.

WATSONIA HUMILIS.—There is no humility about it, save that it is the most tractable for a pot. The flowers are very pale red.

WATSONIA SPICATA.—A very rare bulb, even at the Cape. It is the *humilis* of the whole family, if dwarfness was meant by that name. It is a nice pot plant, flowering with the *Ixias* under the same treatment.

There are many more of this genus, but there is such a family likeness among them all that the above will give a fair insight into them, besides being the best and the easiest to be got from the Cape dealers.

ANTHOLYZA AND ANISANTHUS.

ANTHOLYZA ÆTHIOPICA and **MONTANA** come very near to the *Watsonias* in leaf and colour of the flowers, and so do **ANISANTHUS SPLENDENS** and **CUNONIA**. These all run in the manner of *Gladioli*, and always are sent home in collections from the Cape. They are also to be had in bulb shops.

I think that some members of the three genera would cross and produce self-coloured seedlings that would vie with the very best of the new *Gladioli*. There is a great mystery in many of the Irid genera, and some are founded on such trifling distinctions that it is hard to believe them real marks of family separation. *Synnotia* broke down under the pollen test, and lapsed into *Gladiolus*; and there is a much greater looking difference between *Watsonias*, *Antholyzas*, and *Anisanths*. The whole race want revising by a patient cross breeder. I would no more trust a botanist with this work than I would a lawyer to revise the conditions of a lease for a framing ground.

MORÆA.

These do not often now come from the Cape; are not much cultivated; and it is very difficult to make out some of the kinds one from another. They generally run with light blue flowers, like *Sisyrinchium*s, or yellow flowers with *Sisyrinchium*-like leaves and growth. The same treatment as *Watsonias* will best suit them in an outside border.

VIEUSSEUXIA.

Some of these are sent over in every box of Cape bulbs. The bulbs are small in comparison to the long, slender shoots they throw up. Were it not for the very short time the flowers keep open this family would be in much repute. The "Peacock Iris," a favourite with every one who ever saw it, is one of them, being *V. pavonia*.

VIEUSSEUXIA GLAUCOPSIS is the next greatest favourite. These two are kept in the bulb-shops, and are always grown with *Ixias*; but with the peat for *Ixias* they soon dwindle away and die. A very light, sandy loam suits them much better, and very little water serves them at all times.

VIEUSSEUXIA VILLOSA, **LUNDA**, and **TRICUSPIS**, are the next best of them. The rest are numerous, ill-defined, and little known in this country. Indeed, *Moræas*, *Vieus-*

seuicias, *Sisyrinchiums*, and *Maricas*, are among the most difficult bulbs in the world to classify. Many of them have their flowers come and go in a day; so that, although some of them are exquisitely marked in the flowers, they have never gained much ground in cultivation. It is not at all improbable but some of them from all the four families would unite by the pollen; and if so, they would outdo the bulbous Irises, and look much in the same way. I never found peat to agree with any of this race.

ALBUCA AND ORNITHOGALUM.

Some of these often come over from the Cape, but there is not the least reliance to be placed on the names. They flower like wild Hyacinths, and chiefly have white flowers. I once had a large yellow-flowering *Ornithogalum* from the Cape, but I never heard the right name of it. The bulbs are tender-skinned, and want plenty of sand put in round them, and they dislike peat.

LACHENALIA.

There are but very few good kinds come over of this genus, but at the Cape some of them are said to look very fine indeed. The only two of them that can be obtained in the trade, I believe, are the old *L. tricolor*, and a new one called *aurea*. Both are very good plants. The latter was bought lately by the Horticultural Society from an African traveller, who brought over several curiosities, among which was said to be the *Yellow Geranium*; but the "Golden Yellow Geranium," mentioned by Sweet, is yet to come.

Of all the bulbs in Africa, these *Lachenalias* are the worst to keep, the skin of the bulbs being so thin and tender. They ought to nestle in pure white sand, and the rest to be of pure sandy loam, which keeps them longer than peat. *Tricolor* is as hardy as a Crocus in constitution, and will do in any peat or loam for years. *Flava*, *purpurea*, *pendula major*, and *minor*, *angustifolia*, and *orchioides*, I have seen, more than once, come home in a general collection of Cape bulbs; and I expect *flava* is the same as the Society's *aurea*. Six or seven of their bulbs could be grown in a 48-sized pot, under the same treatment as *Ixias*.

TRITONIA.

At page 399, I see I missed *Tritonia aurea*, the newest and best of the whole family, and now a general favourite in all the Nurseries. The flower scape is branched, or panicle, and produces abundance of large golden-yellow or yolk-of-egg-coloured flowers. In pots it is often half murdered. It would require such a bed as the Ghent *Alströmerias* out-of-doors, and it would follow them in flowering through July and August.

There are several odds and ends of Cape bulbs yet to mention; but these, and what are given at page 398, comprise the great bulk of the small Cape bulbs. The large sorts have been treated of in the order of the alphabet, except *Nerine*, and a few more, which must now stand over for their turn in the alphabetical arrangement.

As a general rule, all bulbs from the Cape that are bigger than a pullet's egg should each have a pot for itself, and that only large enough to leave half-an-inch or so between the bulb and the side of the pot. The first year, one-half of each of such bulbs may safely be left out of the soil; but after that, unless it were in the hands of good gardeners, or practical amateurs, I think all bulbs are safer to be just covered up to the neck with the soil. All these large bulbs ought to have good friable loam, and no peat or leaf mould, nor, indeed, any mixture whatever. The surface soil from an old onion bed in the kitchen garden, is far safer and better for them than the best compost one could make. I have stated the soil for the small bulbs; and I repeat, that a

great error was committed in treating them all, in former days, in peat, like *Ixias*.

People going to reside at the Cape, or in any part of the colony, and who are fond of gardening, should take with them as many of the Mexican or South American half-hardy bulbs as they can procure—for bulbs will carry from place to place like potatoes or onions, and would be safe if planted at once in the open soil. All those who have friends out there, and of whom they would ask bulbs, ought to point to the north-west of the country between Cape Town and the mouth of the Orange River. The whole of that country is all but unexplored, as far as this generation is concerned. There is one bulb somewhere in that country worth anything to a cross-breeder at Sidney—I mean the *Amaryllis marginata* of Jacquin; or *Nerine marginata*, as it is supposed to be by modern botanists. This is known from all other bulbs by a red margin to the leaves. From the south-east, along the banks of the Delagoa River, we once had a *Crinum*, with from thirty to forty flowers on a scape, of most beautiful purple. This is lost, and is now very much wanted to increase the beauty of our half-hardy *Crinums*.

The *Golden Yellow Geranium* we want, too, as bad as anything, but not the pale straw-coloured, gaping weeds which are not worth cultivating. D. BEATON.

SEASONABLE NOTES.

MAKING CUTTINGS OF PELARGONIUMS.—"I have just cut down my plants, after the stems have been well hardened by standing in the sun; and two correspondents, who know all this, have sent requesting some cuttings; but what puzzles me, even though it makes it more easy to suit them both, is, that one wishes to have nice vigorous pieces, with the leaves fresh and green, from the points of the cut shoots; and the other wishes the fine hard pieces from which the leaves have fallen. Now, will you tell me which of my friends has most science and practical utility on his side, as then I may learn something as to what method I should adopt in future?" This is one of those questions on which much may be said on both sides. Where conveniences exist for preventing rapid evaporation from the cutting, and quick rooting is an object, then the first-mentioned mode would be the best; but where the cuttings are to post, coach, or rail, for a number of miles, then the second sort of cuttings will be best, as they may travel safely, hundreds of miles, wrapped in wadding and covered with brown paper. It is also preferable in every case, where a little patience can be exercised in producing a future effect, as that effect, ultimately, will be better, more quickly reached, and attended with much less trouble and care, than in the case of the seemingly more healthy and luxuriant rival. How is this? say some of our young readers. Just thus: these green points have been carrying on an elaborating-of-juice process—the older part of the stem first gets the advantage of this, as the next-to-invisible buds are formed in the axils of the leaves before they drop; but at the points of the shoots these buds are only thinking about forming. You get a nice rooted plant quickly, it is true, and we by no means speak lightly of its pretensions—nay, if you wished to get it as *high* as possible in the shortest time there might be something to say in its favour; but if you wish to give the plant a bush form, it is evident that you must pick out the point of your aspiring shoot to force the almost imperceptible buds to break into young shoots; while, in the cutting of the older wood, cut across at a joint, and with two or three joints above, you would have a young shoot from each of these joints, proceeding contemporaneously with the

formation of roots; while the best of it for cottage gardeners is, that such well-ripened pieces of florists' Pelargoniums require no more trouble in the months of July, August, and the first part of September, than a leafless gooseberry or currant cutting inserted in the open ground in spring. So far as I have noted, such plants are generally more robust and hardy through life than their more soft, luxuriant brethren. First appearances, therefore, however pleasing they may be, are no sure test, either of economy or future superiority. Here, however, as well as in many other matters, the middle path is the most advisable. The point of a well-ripened shoot has, as we have seen, its buds yet to form; the base of the shoot may be as indurated as a piece of oak, its buds will come, but you must give them and the rooting process time. Shoots, or parts moderately indurated, will yield most advantages, with fewest drawbacks.

RIPENING SHOOTS BEFORE PRUNING.—The reason will now be obvious why we recommend hardening Geraniums in the sun before pruning them. Independently of the cuttings, the young shoots on the old plant are much more robust than when they break from softer wood. A lady, fond of flowers, held up her hands, the other day, as she looked on the bare-boned skeletons of what had been large Pelargoniums, and yet a good grower would have seen nothing particular about them. Another window gardener cannot think for a moment of subjecting a favourite Fuchsia plant to the rough hardening process alluded to the other week, while it continues to yield a single flower. Need there be any wonder, that part of the shoots of such a plant should die in winter, or when pruned, either in winter or spring, that the buds will break so irregularly, that you know not how you can bring it into shape in any other way than allowing it to dangle as carelessly as the Clematis on the way-side hedge? It has been so arranged in the affairs of this world, that striking results generally be the consequence of thought, looking after, and self-sacrifice, even though the casual observer may fail to note it. The sacrificing of the present appearance of the pot-plants, so as to ensure their ripening and hardening, is often the foundation of all future excellence. Thus, in the case of the Fuchsia referred to the other week. When the plant is to be cut down to the ground, it is of less moment, as the buds then are likely to be matured. Thus, again, in the case of the Scarlet Geranium, now so luxuriant in beds and baskets. Who would not wish to save a number of them over the winter for future display? Well, the ease with which this may be done, and their future early and full blooming next year, depend greatly on removing many of the larger leaves, so that a bright autumn sun, and a free current of air, may play upon and harden and consolidate the stems. Two other familiar cases strike me at this moment, and to which I will allude, as furnishing an answer to

SOME COMPLAINTS OF WANT OF SUCCESS.—The *Clerodendrons* have previously been recommended for greenhouse display in summer, wherever there is the opportunity of giving a higher temperature when growing. They are always interesting when grown as large plants, as seen at the great exhibitions; or merely with a single head of bloom, in a small pot, from very small cuttings of the spring of the same summer. But fine flowers, and great success in either case, depend on the hardening and ripening of the wood before storing the plants for the winter; and then they will bear an amount of cold that would kill them outright when more spongy and soft. Then, again, who has not admired the beautiful *Aphelandra cristata*, and its relatives, which, some friends say, they cannot get to bloom, even though, according to the hints they have received, they have placed the plant full in the light, and

even stinted the plant of water, but not a flower would come; while tiny plants, in their neighbour's garden, from cuttings of the same season, have each its head of bloom. The secret is to be found in the unripeness of the wood, in the one case; and the ripeness in the other, before pruning, making cuttings, and starting into growth. In the case of the plant that will not flower, let it have plenty of heat, light, and air, now, with a gradual lessening of water, and kept cool in winter; and then, when pruned back, I should expect each shoot to be loaded with its head of bloom next season.

POTTING HAIR-ROOTED PLANTS.—"Neighbour A. grows Heaths, Epacris, Azaleas, &c., very well; but I observe that, in almost every case, he keeps the centre of the ball, where the collar of the plant is, as high as the rim of the pot; and, in many instances, where the plants are large, an inch or two above it. Neighbour B. grows his plants equally well, and yet his balls of roots are all beneath the rim of the pot; in fact, in this respect, he pots a Heath just as he would a Cineraria or a Geranium. Now, both give me their reasons, and both seem conclusive enough; but they leave me in a perfect quandary what mode to adopt as the best, and as entailing least care and labour." This is just another example of what a great poet said about governments—"That which is best administered is best." There may be many roads to the same town, and different travellers may have their taste respecting them, and, *provided* each keeps to his favourite road, they may reach the marketplace at no great distance of time from each other. We see this verified every day in gardening. Apparently opposite systems are crowned with equal success; but, in such cases, that success depends upon minutiae too apt to be overlooked, though, without these minutiae, each might try the scheme of the other, only to be dissatisfied with the result, and revert again to his more accustomed practice. Now, at the risk, in these days of extremes, of being called "a canny moderate," I would here again, for all such plants of any size, advocate a middle course, neither lifting the ball above, or equal to the rim of the pot, nor potting it as deep as I would a common Geranium. The elevating the ball of the plant was a good enough idea, when, from using fine-sifted soil, and insufficient drainage, there was little security against the reckless wielder of the watering-pot. But then, it must have been apparent that the only moisture obtained by the elevated roots must have got there by some process of capillary attraction; while, in every case of fresh potting, the fresh soil would either be saturated, or the water passing there too freely would leave the centre of the ball much too dry. Now, the practisers of this mode had their own minutiae. Such as dipping, &c., now and then, for avoiding all these results; but want of attention to these minutiae would be ruinous to a beginner. Then, on the other hand, by potting the surface of your ball level, at a certain distance beneath the rim of the pot, you would, in the case of a specimen you intended to be getting larger and better every year, detract from its dignity, inasmuch, as if left to itself it would be most likely to form a little elevated mound where the collar of the plant is situated, and which can never be much buried in plants of this nature with impunity. But this is not all. By using, now and then, surface-dressings, it is probable that the centre of the ball, instead of being the highest, would be likely to become the lowest, and unless the watering was done very carefully indeed, it would be difficult to avoid having the collar of the plant either constantly wet, or exposed to sudden extremes of wetness and dryness; and the changes of temperature, produced in this manner at the collar of the plant, not only by using water of different temperatures, but by the cold produced by the evaporation of moisture,

would, more than half cultivators are aware of, be apt to carry off such a fine plant without any apparent cause. In watering all such plants, especially in bright weather, it is advisable to avoid wetting the stem at the collar, and yet secure the thorough moistening of the roots. Now, this can be thoroughly secured without either raising the ball above the pot, or taking away the natural gracefulness of having the collar of the plant showing its little elevated mound. For instance, here is an 8-inch pot we wish to transfer a favourite plant to. Well-arrange the drainage and soil at the bottom, so that the centre of the ball at the collar of the plant shall be three-quarters-of-an-inch below the rim, and the outside of the ball from an inch to an inch-and-half. Then pack firmly with the open compost, but raise the soil at the edges of the pot as high as the mound in the middle. Do this for two purposes—the new soil, by being well watered, will become more compressed, and will sink, when a little more may be added, but before it does so, or becomes filled with roots, the little ridge there will send the water where it is most wanted—into the surface of the ball. A rose may be used for several waterings at first. But to save time, and preserve the bottom of the stem from being wetted, the spout of the pot may afterwards be used, taking the precaution, however, to pour the water, not on the soil, but on a potsherd, an oyster-shell, or anything of that kind, so that the water will flow equally all round, without disturbing the soil in any part. Need I add, that no plant should be shifted in a dry state. As some of our young beginners complain of the want of minutiae, these notes are especially for their use, and simple as they are, attention to them will secure against several causes of failures.

R. FISH.

JOTTINGS BY THE WAY.

(Continued from page 424.)

WORTLEY HALL, near Sheffield, the seat of Lord Wharnccliffe.—At this place there are considerable improvements in garden matters going on. The plant-houses formerly stood at a considerable distance from the mansion; and, besides that, were from old age becoming in a decaying state, so that it would have been necessary to almost rebuild them, even had they been allowed to remain on the same spot. They are now being put up in a situation nearer the mansion, and also a new and handsome conservatory is building in the midst of the flower-gardens. Lady Wharnccliffe has a great love for plants, and very good taste in flower-gardening, and, therefore (as might have been expected when the lady delights in flowers), there is here a good collection of stove and greenhouse plants, as also a neat, well-furnished flower-garden on the bedding-out system.

Here I saw a good bed or two of that free-flowering plant, the *Oenothera riparia*, syn. *O. prostrata*. Mr. Law, the clever, intelligent gardener, assured me that it was perfectly hardy, having stood the winter for several years in the place where I saw it growing and blooming freely. It makes a good yellow bed, and does not grow more than six inches high. The beautiful shrub, *Abelia floribunda*, also is hardy here. It was planted-out in 1850, and has grown well, and had no protection. Wortley Hall stands upon a considerable elevation, and, perhaps, that fact has something to do with giving power to plants (in other situations found tender) to endure the winter cold. In a rather sheltered corner, there are two large *Camellias*, planted thirty years ago, that have had no protection. They are the old Double-striped. Formerly there was a large tree of the Double-white, but the severe frost of 1837-38 destroyed it, so

that it seems there is a difference in the constitution of *Camellias*; for these two double-striped ones escaped, or, rather, endured that severe frost, while the white one was killed, the situation, soil, &c., being alike.

There are scattered through the extensive pleasure-grounds a considerable number of the better kinds of *Coniferae*. I noticed that *Juniperus Goreniana* had suffered greatly last winter; in fact, it was killed to within a foot of the ground; the rest were scarcely injured. *Cryptomeria Japonica* was not even browned in its foliage—a circumstance that often happens with plants placed in more favourable situations as regards the amount of cold.

The *Walks* in this place are all in the course of being concreted. In the neighbourhood of Sheffield, the walks in gardens, and even the public foot-paths, are nearly all concreted, and are exceedingly beautiful. The beauty consists, in a greater measure, from the sprinkling of Derbyshire spar, broken small, over the surface, upon the concreted mass of rough cinders and coal-tar. Many persons object to concreted walks made with asphalt, or coal-tar; but, if properly done, the smell soon evaporates, and is not perceived afterwards. I particularly inquired of Mr. Law, if the coal-tar was offensive to the nose? and his answer was, "Decidedly not, after the first four or five days." The Sheffield garden-walks are most excellent—I may venture to say the best in the world. They are dry almost always; they are firm and smooth; and, when clean swept, look like black marble, spotted with white. No moss, or weeds, ever grow upon them, and they will last a man's lifetime without any repairs. Are not these walks, then, possessing such admirable properties, the best in the world? When I arrive at home, I shall certainly concrete some of my walks, *a-la-Sheffield*, as far as possible, though I fear the Derbyshire spar will be too expensive; fortunately, it is not absolutely necessary, for small, light-coloured pebbles from a river's-bed will answer the same purpose.

In the *Hothouses* here I observed several new, or apparently new, stove climbers. Lord Wharnccliffe's health last year having been indifferent, he was ordered by his physicians to travel into a warm climate, to recover a healthy state. The West Indies was fixed upon, and, happy am I to say, with the best results. Lady Wharnccliffe accompanied him, and her active love of flowers led to collecting seeds and orchidaceous plants. Under the fostering care of her gardener the seeds quickly germinated, and many of them prove to be climbers. One has flowered, and is a singular plant—a double-blossomed *Clitoria ternatea*, with large blue flowers. The petals are multiplied, so as to form what is called a semi-double flower. It is very handsome, and, at the time I called, had several flowers expanded. The rest of these climbers appear to be species of *Glycine*, and other papilionaceous genera. The Orchids are growing well; and I observed several new Ferns that have sprung up among them.

The *Kitchen and Fruit Gardens* here are, at present, not in first-rate order, owing partly to the wet season, and partly to the family being from home so long a period; but I trust they will now be put into good repair.

In these gardens, as is well-known, the late Joseph Harrison practised the art of pruning so successfully, that he was induced to publish his experience; and, to this day, his book is a text-guide to the art of pruning fruit-trees on walls.

From Wortley I went by rail to Liverpool. The line of railway runs through a mountainous district. The cuttings, consequently, are in some places most terrific; but the sides of the split rocks are fast becoming covered with Ferns and other Alpine plants. In the neighbourhood of Penistone, I am told, there are many

of the rarest British plants. This railway gives great facility to the botanical collector, bringing him, in a few hours, to the very locality where these rare plants are growing wild. I longed to stay for a while in these solitudes; but business, business! called, and I could not disregard the summons.

Between Wortley and Manchester, not far from the secluded town of Glossop, there is a very long tunnel, through which the railway-train and engine rush over, in some places, unseen depths of water, which causes a very peculiar loud sound, very terrifying to the nerves of the ladies, aye, and of many of the stronger sex too. I have travelled some thousands of miles on railways, both on level ground and on lofty arches, as well as through the bowels of mountains, but I never heard such fearful noises anywhere else as in the long tunnel of the Sheffield and Manchester Railway, which said rail runs through the so-called "back-bone of England."

T. APPLEBY.

(To be continued.)

THE HYACINTH.

As the season for potting, glassing, and planting this lovely spring flower is fast approaching, I think a few remarks on its culture will be acceptable, and, possibly, useful, to many of the readers of THE COTTAGE GARDENER. It is grown by all ranks of people, from the window of the cottage to the conservatory of the royal palace. It is a somewhat remarkable fact, that with all our skill in gardening we are obliged to send to our neighbours, the Dutch, for an annual supply, not only of this root, but also of the Narcissus, and many others. The soil and climate of Holland seems to be peculiarly favourable to the culture of bulbs. There they are quite a commercial affair, just as much as the Carnation, the Pink, and Picotee, are here. The sums of money drawn from this country, for bulbs alone, are very considerable. I have been credibly informed, that one house alone receipts between six and seven thousands a-year. Whether some of our flat lands, near the seashore, would grow these roots, is, as yet, unknown; but, in a proper situation, with proper soil, and a due attention to management, I have no doubt they might be grown quite as well here as in Holland. At all events it is worth a trial.

In describing my experience in the culture of the Hyacinth, I shall, for the sake of perspicuity, divide the subject into three sections:—1st. Culture in glass. 2nd. Culture in pots. 3rd. Culture in beds. This arrangement will meet the wants of all classes of growers.

IN GLASSES.—Bulbs, as our friend Beaton tells us, form their flower buds on spikes the previous season. Hence, if this is properly effected, they are sure to flower; hence, any bulb so perfected will flower either in or out of the earth, or even in water. This, in the case of the Hyacinth, is well known, and practised everywhere, and has, in course, led to a large manufacture in the shape of glasses, popularly and properly known by the name of Hyacinth-glasses. They are so well known that I need not describe them; but I may just mention, that last year I observed some made of various coloured glass, and with the lower part blown out a little wider. This is an improvement, for, in the ordinary shape, the bottom of the glass is crowded with roots, which cannot be so well as if there was in that part a little more room. I have also remarked that short glasses are, for the same reason, objectionable; and, for another, when the roots are strong in a short glass, they will lift up the bulb, and, if in flower, very likely destroy it, by tumbling it over out of the glass. The glasses, then, ought to be at least nine inches long, with a cup at the top to contain the bulb.

The bulbs should be put into the glasses at two or three times, if a lengthened season of bloom is desired; the glasses should be filled with soft clean water, just up to the neck, but not actually to touch the bulb. The time to do this depends upon the wishes or wants of the cultivator. If wanted early, they should be put into the glasses as soon as the bulbs arrive from Holland. When they are so placed, and at whatever time, they should be put into a dark, cold room for a fortnight, to cause roots to be formed previously to the bloom-buds appearing, by which care the success will be more certain. Examine them occasionally, and remove gently any scales that may be decaying, but be very careful not to injure the young roots, which will soon be seen breaking through the skin at the base of each bulb. Should the water become foul, let it be changed, keeping each glass filled up to within a quarter-of-an-inch of the bulbs, but do not let it actually touch them. When the buds and leaves have made a little growth, they should be brought into the full light of the window, but even then, if possible, avoid a window facing the mid-day sun, or one in a room where there is a fire. These precautions are to be attended to for the purpose of inducing a gradual growth, and, consequently, a much stronger foliage and finer bloom.

When the roots have nearly reached the bottom of each glass, if they are carefully observed, there will be seen, at the extremity of each, a pellicle or covering of mucous matter. This soon stops up the spongelets, or, as I may say, the mouths of the roots, by which the food of the plant is conveyed to the leaves; these spongelets, being thus prevented from performing their functions, perish, and often the whole set of roots are destroyed also. To prevent this serious disaster and destruction of plants (for I consider the clear white roots of the Hyacinth, in glasses, are exceedingly beautiful), the roots should be drawn carefully out of the glasses, a wide vessel should be placed hardly filled with clean water. In this immerse the roots of a bulb, and draw the mass carefully through the hand, pressing them gently. Do this two or three times until the roots appear quite clean, and perfectly white. Whilst one person is doing this, let another be washing out the glass, and wiping it quite clean and dry. Then gradually work the clean-washed roots into the clean-washed glass, before putting in any water, without, if possible, breaking one. To get them in when they are numerous, it will be found necessary to twist them round and round till they reach their old quarters at the bottom, and the bulb rests upon the neck of the glass. Then fill the glass with clean water, and replace it in the window. It will generally be found that once washing will be sufficient to carry the bloom through. After this no more care will be necessary, excepting occasionally changing the water. Bulbs bloomed in glasses afterwards are only fit for the border; the roots do not take up sufficient nutriment to perfect strong leaves and blooms for the next year. As soon as the bloom is over, the bulbs should be taken out of the glasses, preserving all the roots. Lay them in a border in the garden, and give a good watering. Here they will gradually ripen the bulbs, and the leaves will as gradually turn yellow and decay. Then take them up and keep them dry and cool until October, and they may then be planted in the borders in the flower-garden.

T. APPLEBY.

(To be continued.)

OCCUPATION OF VACANT GROUND.

As the season has now arrived in which many crops are cleared off, it becomes the skilful cultivator to consider in what way his ground can be most advanta-

geously cropped again, so as to have the full benefit of what growing weather is yet to come, and to have as many substitutes as possible for that important production, the *Potato*, which is, too truly, all but a general failure. In every district that I have been able to hear from, it is worse diseased than on any occasion, except the first year of its introduction, and one subsequently. Now, as large breadths of ground, rendered vacant by the taking up of this root, will necessarily be at liberty for other crops, it is highly advisable to sow or plant the same without delay, in order to obtain some recompense for the loss the failure in the recent crop has caused. Every day's delay in the performance of this work is just so much loss, by abstracting so much from the best part of the growing season; as one day now will tend more to advance a plant than a week will do in October. It is needless to urge on the cultivators to be up and stirring, for though much progress, doubtless, has taken place, in the latter month, with plants of the *Cabbage* tribe, yet it must be remembered, that such progress is more in the large plants than in the smaller ones. The later ones seem not to be possessed with that vital energy necessary to urge them on against the cold, and other difficulties of the season; it is, therefore, of much importance that they be sufficiently advanced, before the advent of that cold season, so that their growth be not then arrested. In fact, we hope, long before this paper reaches our readers, that large breadths of useful autumn and winter vegetables will be occupying the spaces which, in July, presented the desolating appearance of the diseased *Potato*-fields.

As many people dug up the crop at the time, or very soon afterwards, it is likely that the ground so cleared was at once planted with some or other of the *Broccoli* crops; others, which have only been cleared more recently, might also, perhaps, have received a later planting of the same useful production; and even now, plants put in, may, in all likelihood, become useful in spring, provided the winter be not too severe; but even in that case, small plants sometimes struggle through as well as larger ones; and though fine, large heads cannot be expected from such, yet they are generally acceptable, so that it behoves the skilful cultivator to make the most of his ground that circumstances will allow; and a little extra exertion, at this time, will enable him to accomplish this in a much better way than he will at first be led to imagine.

In addition to planting larger breadths of the winter stuff mentioned above, certain crops may yet be sown, with a fair chance of becoming of great service in spring; of these, *Turnips* stand first, as being the most useful as well as most hardy. Seed, therefore, of some good, hardy, autumn sort ought to be sown; and in due time the crop must be thinned, and weeds, &c., destroyed; and although the bulbs will not get large, yet they often become nice and firm; and, in mild winters, they keep growing until the advance of spring sends them to seed, prior to which, however, they often furnish many useful dishes of greens, in the shape of those little sprouts they furnish in such numbers. The best kind is certainly one partaking of the characters of the "*old Stone*;" most probably some of its progeny may have improved in some of its points; at all events, sow a quantity, and the produce, though small, will amply repay you for the trouble and seed made use of. This crop may occupy some exposed or out-of-the-way place, where it would be imprudent to sow or plant a more delicate one; in fact, it is in fields that such crops are often both best and most profitable, and it is there that we advise its being done now, believing, that before this the bulk of *Turnips* wanted in gardens will have been sown, and, perhaps, thinned.

It is only in those less-favoured spots that can be spared for this crop, the interior of most gardens being

often planted or sown with something else, less robust than the *Turnip*; and first in the list, for general usefulness, is the *Cabbage*, or *Colewort*, as the earliest are called in the London market. These last-named productions, which many cultivators in distant counties are unable to comprehend, are neither more nor less than ordinary Spring Cabbages; but, being sown earlier than is usual for this class, arrive at a size, in autumn, at which they might then be cut, if wanted, but are left so, and cut very early in spring, they having grown considerably during the winter, if it has been at all mild, but if severe, their size, instead of being the means of saving them, has a reverse tendency, so that they lose considerably of their outside leaves besides being crippled in other respects; however, they usually constitute an important crop to all who cater for the public taste; and in order that they should be as serviceable as possible, care is taken to sow only such kinds as are not likely to run to seed. This point in *Cabbage* culture has certainly been much improved upon of late years; yet, now and then, a batch will be seen possessing the flowering character of their original parents. These, of course, must be abandoned, or rather discarded, immediately, and only those sown which possess the requisite qualities; and although it cannot always be depended on, sowing the same kinds year after year, yet, for the above purpose, we have found the varieties called *Eartham*, *Downham*, and *Fulham*, all good, and less liable to run to seed than some others; but for early use they must be sown by the middle or about the 20th of July; while, for the principal spring crop of Cabbages, the 12th of August is soon enough in the south of England—making, of course, that difference for latitude, and other circumstances, which individual cases call for.

Another useful winter, or early spring crop, is *Spinach*, which, if sown the last week in August, will grow away during the mild weeks in autumn, and produce leaves in abundance for use in winter and early spring. This may be sown in continuous rows, a foot apart, and though they are seldom thinned in autumn, yet a little help that way will not be without its merits. Keeping them clear from weeds, &c., must, of course, be strictly adhered to; and if the wants of the family require it, a certain portion might be slightly covered up in severe weather, to save it from the frost and other mishaps common at that time. Ground that has had a crop of potatoes is often sown with this crop, which may be done without any additional manure, for too much of the latter induces a grossness of habit incompatible with its enduring the rigours of winter.

Large breadths of *Lettuce* may be planted out, as also of *Endive*; but these ought to be honoured with a border or other sheltered position, for although they will grow tolerably well in the open ground, and are often planted there, yet they do not come so soon into use as when favoured by some sheltering wall or other object. The kinds most proper to plant now are the hardy *Hammersmith* and *Brown Dutch* *Lettuce*, with a little of the *Brown* and *Green Coss*; and of the *Batavian Endive*. These last had better be planted more sparingly than the *Lettuce*, because, being less favourites, are not so much wanted, except in very severe winters they may withstand it better than the others. Now, in planting these last care must be taken to have the ground made fine, and dry weather is, on the whole, better than moist, as the latter encourages the slug, and other enemies, to prey on the young plants, which are sometimes to plant over several times in consequence. Even if the ground was made tolerably firm on the top, it is better so than if in the rough clods of ordinary digging; for the interstices between the latter are just so many dwelling-places for the enemies of the crop to retire into—thus remedial measures are

difficult to put in force, until, by repeated treading, the ground becomes more solid. Of course, this consolidation must be effected when it is tolerably dry, otherwise the injury done in another way will be equal to the benefits expected. Where a choice can be made, dry sandy soil is the best for such crops; but, ordinarily, they will endure most of our winters in the common garden soil of districts on a stiff, retentive loam, and we are not quite sure but the latter description of soil suits them best in summer; and if they can be saved through the winter, such a soil will produce the best heads in spring, too, if everything else be favourable for their well-being.

Many things will now require a little assistance to enable them to perfect their growth this season, as *Tomatoes*, *Capsicums*, and other tender sweet herbs. In the first-named, close pruning-in, and limiting the number of fruit, will hasten the perfection of what remains. The same may be said of *Capsicums*, which may be induced to ripen faster, by part of the foliage being removed, &c.

J. ROBSON.

CULTIVATION OF TARES.

TARES, or Vetches, are of two kinds—Winter and Summer—the former being usually sown in the autumn, and the latter in the spring. There are also two varieties of the Winter Tare, one coming to feed early, the other late. This crop furnishes a very important and useful produce of green food, and, in the economy of farming, it is desirable that the cultivation of Tares should receive its due share of attention, for in many parts of the country it is the most valuable green crop with which we are acquainted, being available as food for sheep as well as for the soiling of cattle, when sown in succession, during the whole of the summer months.

It is desirable, in selecting land for sowing Tares, to take that which is clean and free from couch grass, for it rarely happens that sufficient time can be had, or that the weather is favourable for clearing the land, after the crop has been fed or removed, to be followed by a crop of Turnips.

It is, however, seldom that all the land intended to be appropriated to this crop can be found quite clean; it is, therefore, necessary, when the land is foul, that a course of tillage should be commenced before sowing the seed. To effect this, I recommend to begin as soon as possible after harvest, and rather, or half-plough the land, rather shallow, then scarify across the ploughing, which process will move all the surface, and lay the land light and loose, and in a favourable state (supposing the weather to be dry) for the drags, harrows, &c., to work out the grass and weeds, to be collected upon the surface, in order that they may be burnt or carted away from the land.

Then plough the land a good depth, into ridges of such size as the nature of the soil may require; for this crop, when sown in the autumn, is very liable to be injured by the alternate action of the heavy rains and frost; it is, therefore, highly necessary that the land should lie as dry as ridges can make it, taking care, at the same time, that a sufficiency of water-furrows be made for the purpose of removing the water from the ridges. The best time for sowing both the varieties of

Winter Tare is the first week in September, although in some seasons, upon a dry soil in good condition, they come on and give a fair produce when sown as late as the month of November; but in this case the crop is much more uncertain, being liable to be carried off by the slug, or damaged by frost.

From two to three bushels of seed per acre will be sufficient for an acre; the latter quantity is preferable if sown rather late, and it is a good plan to sow about three or four gallons of Oats or Winter Barley mixed with them, or, in case of the early sort, the like quantity of Rye. The advantage of this mixture will be found at the time of feeding or cutting, as well as during the period of growth. The flag of the Oats, or other grain sown amongst them, shelters the Tares from the effect of frost, and at the time of using the produce, either for feeding sheep or the soiling of cattle, a much larger portion of the crop will be available, the strong stalks of the corn holding up the Tares, and preventing the bottom part of the haulm becoming partially decayed. To this result it is very liable on good land, in a favourable season—in which case it becomes quite useless as food for cattle, and when cut for soiling the whole crop is unpalatable. Tares are usually sown broadcast; it is, however, a good plan to drill the seed at about seven or eight inches space between the drills, and this method is more in use than formerly, as it gives an opportunity, in some seasons, to use the hoe, and destroy Charlock, and other weeds which often infest this crop.

Formerly, manure used generally to be applied to the land previously to sowing Tares, in order that an abundant crop may be obtained, and that when followed by Turnips it may prevent the necessity of applying manure at the busy period of Turnip-sowing. It is, however, now only needful to apply manure where the land is too poor to bear a good crop; for, after the land is free of the Tare crop, any amount of artificial manure requisite may be applied with the Turnip-seed, without the delay consequent upon the application of yard or town manure.

Previously to the introduction of artificial manures, and the use of the Turnip drill, Tares were not considered a good preparation for a Turnip crop upon some soils; for when Turnips were sown broadcast, after a crop of Tares fed by sheep, and without other manure, although the land might be rich enough to produce a crop, yet the young Turnip-plant does not thrive well upon the generality of soils, and it often became a prey to the grub, wireworm, &c. This is, however, now become an almost obsolete practice, and is only mentioned here to caution cultivators against the use of anything except artificial manures.

The method of consuming the crop varies, and should depend, in a great measure, upon the rotation intended. When the object is to grow Turnips after the Tares, the crop should be fed whilst young, in order that the land may be left with a clean surface; or, in case of being cut for cattle, the whole of the haulm should be taken away, it being injurious to the Turnip crop when any portion is turned down and buried with the plough.

The best time for feeding Tares with sheep is just before they begin to bloom, and up to the period of full bloom, and after that they are valuable to cut for soiling horses, &c., as long as the haulm is green. I must here observe, that in case of feeding with sheep, when the crop is very abundant, or getting old, it is the best plan to cut with the scythe, and put into racks or eages, in order that any portion not eaten by the stock may be easily removed.

When the land is intended for Wheat (particularly upon heavy soils), a portion of the crop being left unconsumed may be ploughed in and buried with advantage; and if the land be sown with White Mustard, and fed on the land, not too late in the season, it will prove an excellent preparation for a Wheat crop.

JOSEPH BLUNDELL.

BRAHMA POUTRA FOWLS.

I TRUST you will be able to spare a little space for me on the subject of Brahma Poutra Fowls, so much discussed of late.

I can scarcely understand your merciless condemnation of these so-called Brahma Poutras, and think that, in the absence of direct evidence of their being the result of a cross, you should pause before knocking them down in the manner you have done. I contend that no evidence calculated to stamp them as mongrels has yet been before the public; on the contrary, all we hear and see, if well looked into, leads to the fact of their being, at least, a distinct variety of the Shanghae, as distinct and pure as are the Buffs, Whites, or any other colour. I am aware that several persons have accidentally (as was imagined) produced birds resembling these in plumage; but on enquiring, you will find, as I have, that either the father or mother were of this description, and have come from some of Mr. Stainton's Greys. This I can prove to be the case in several instances; and with reference to some of the chicks being Buff, and others Grey, some have taken after one point, and some after the other; and do we not see the same thing continually among Buffs and Partridge birds, where there is even the slightest tinge of a cross; and I have no doubt that the birds thus produced, would throw back, even if mated with birds of the same colour as themselves and pure breed, and some of the chickens would show unmistakeable symptoms of mongrelism: but I firmly believe that birds bred from her Majesty's, Dr. Gwynne's, or Mr. Sheehan's stocks, will produce birds as true to feather, the next and the next generations, as they have this; and that they have done so this year is an undeniable fact, and of which I have evidence as regards the first two strains running in my yard, and shall be happy to shew you, or any other person wishing to see them.

I must beg to be allowed to say a few words on the communication of your correspondent in this week's number of THE COTTAGE GARDENER. He says, "a poor gardener, by name Turner, received a grey cock in payment of his services from Mr. Griggs," but he does not say where Mr. Griggs obtained him. If I am not mistaken, I think you will find that Mr. Griggs imported him; he describes him as a remarkably fine bird, but not liking the colour, he sold him to Turner for a fair price; but no such bargain as your correspondent states was made for him. He also lays great stress on the fact of so small a sum as 10s. cash being paid for the chickens (which he acknowledges were only half-bred, being between the Grey cock and Buff hens.) If I mistake not, 10s. each was not considered such a very low price for chickens three or four years back, particularly for birds which were not known. I have seen first-rate birds sold for quite as little; in fact, I think the price was a good one, and quite sufficient to establish the fact that some one had discrimination enough to see their good points. The fact of Mr. Stainton, and others, discarding them on account of their colour, ought not to condemn them; because you

may find plenty of people now who prefer Partridge birds to Buffs, but that does not make the latter any worse; it is merely a matter of taste; and if you have your taste, in fairness you should let me have mine; yours may be black; mine, white.

Again, your correspondent says, with reference to the sale of some of these birds last year, "that nobody would look at them; and that many were sold for a trifle; and that he stood by and saw six or seven lots put up without a bidder." It is very easy to make assertions, but not always so easy to prove them. I happen to have marked catalogues of nearly every sale at Stevens's since last September; and only on two occasions do I remember seeing any of these Greys put up. The first was on the 22nd September, when lots 28 to 37, all Greys, and most of them only chickens, fetched respectively the following prices, namely:—22s., 75s., 63s., 46s., 34s., 30s., 42s., 42s., 44s., and 23s. I think for that time these were not very bad prices; and lot 39, 75s., has since, I believe, been sold for £6 15s. The next time any of these were sold was November 9th., when five lots were put up. They were very inferior to the others, and all appeared to have had a sort of tuft plucked out of the back of the head; they were, however, all sold, at prices varying from 10s. to 14s.; they were all chickens a few months old.

Your correspondent also says of these birds, "that nothing can be more common or ugly-looking;" but it appears he is speaking of only one lot of birds, and which are acknowledged, even by their owner, to be but inferior specimens. If he would take the trouble to pay me a visit, he can see some chickens from the Queen's and Dr. Gwynne's stocks, which, I am sure, can neither be set down as ugly or common looking, in fact, they are the admiration of all who see them. I should like him to see them running, as they look much better on the ground than in a pen. If he thinks it worth while, and would let me know when he would come, I should be happy to receive him.

P. JONES, JUN., *High Street, Fulham.*

[Where is our "merciless condemnation" of Brahma Poutras? Our condemnation, and merciless too, is of the attempts to give them a value to which they are not entitled. If they are admitted to be mere Grey Shanghaes, and that they do *not* lay eggs as large as Turkeys; and that they are *not* superior to all other Shanghaes; then have we done some service in preventing the public being duped.—ED. C. G.]

CULTURE OF BRITISH ORCHISES.

As I have never yet heard of anybody who has succeeded in growing our native Chalk Orchises, which failure appears to me to proceed from a want of knowledge of their likings and dislikings, and having no means of trying them properly myself, I venture to send you the following remarks, hoping to induce some enterprising botanist to enter on the attempt. "Grow the Chalk Orchises! Nonsense! You'll never get them to do; they may live one year, or perhaps two, if you're lucky, but they will all die off after that." These are the sort of remarks with which these suggestions, and with which any one who attempts to grow these beautiful and singular plants, is greeted on all sides; and some Mr. A. or Mr. B. is always brought forward "who dug out a flower-bed, several feet, and filled it with chalky soil, and having put in the bulbs in the autumn with great care, waited for the spring to see the result, and not one of them flowered!"

Astonishing fact! Having been put in a situation which was about the last they would have chosen, it was *marvellous* that they did not thrive. The Chalk Orchises (by which I do not mean the three or four to which modern science has restricted the class, but the tribes of *Ophrys*, *Habenaria*, *Gymnadenia*, and *Acraea* as well) are infected with a sort of *hydrophobia*. Not content with keeping out the rain by means of a close chalky soil, they *require* (at least, so I believe) a *decided slope* to grow upon, that the heavy rain may run down and leave them dry. This I take to be *much more* important than the chalky soil. I have in a flower-bed a row of *Bee Orchises* which have lived and flowered (though not in perfection) *four* years. *Bee Orchises* have been planted in the front and middle of the same bed; and in

another bed far more chalky and more in the sun, but none have lived but this row at the back. The position is shady, and the ground nearly free from chalk; they were taken up *in flower*, and yet they did *not* die. The fact is, that a little projecting bit of the roof of the house keeps off the heavy rain, and this one advantage appears to compensate for everything.

My advice, then, is—plant them on a sloping bank which has been “made” for them, and in a good sunny position, and if they *will not* do then, I will believe that they *cannot* be grown; but *till* then, I shall still believe it practicable.

Some of the Orchises require a different soil and position; perhaps, in another letter, I may say something about them; but *Ophrys apifera*, *Ophrys muscifera*, *Aceras anthropophora*, *Gymnadenia conopsea*, and *Orchis pyramidalis*, will all enjoy the sunny chalky bank. W. P.

[We had expunged the “perhaps” from the above half-promise, but leave it that we may append this expression of our hope that you will favour us with your remarks upon other British Orchids.—Ed. C. G.]

SHANGHAE COCKEREL AS A NURSE.

PERHAPS some of your readers may feel interested in the following, as a further illustration of the docility of the Shanghae Cocks as nurses:—

I have a White Shanghae Cockerel, of Mrs. Herbert's breed, hatched in January last, whose usefulness well repays me for the care requisite in rearing so early in the year.

A few weeks ago, I had four hens, with each a brood of chickens, and I wished to have their eggs before the usual time for them to lay again. How could I manage this? I had observed this young cockerel to be very kind among chickens. Was it possible that he would nurse them? I determined to try, and placed them with him, in a warm, large, dry pen, and he appeared perfectly to understand the importance of the trust committed to his care. For an hour or two, some of the chicks were fretful for their mothers; he seemed to interpret their feelings, and chuckled, and called, scratched, broke bits of soft bread placed for their food, and, in short, did everything to comfort and amuse his young charge until they became tranquil, walking about the pen with the utmost caution, lest he should tread upon any of them. They soon became quite familiar with him, and he will carry four or five on his back at once. At night, the youngest of his large family sleep under his wings, and he looks most paternally anxious until they are all housed and settled.

Thus, through the docility and care of this cockerel, I am receiving four extra eggs every day, one from each of the mothers, and he is nursing forty-five healthy chickens. Two or three times, I have put him into another pen, to see what would be the result, when he showed the greatest uneasiness to return to his broods, and they gave the most cordial signs of welcome when he was restored to them. I have two other Shanghae cocks which, though I have never tried them as nurses, are also very good with chickens. —M. C., *Altrincham*.

MANAGEMENT OF GOLD FISH.

IN one of your recent numbers, you noticed that a correspondent had made enquiries respecting the proper treatment of Gold Fish. The following remarks, made by a person long resident at Shanghae, may, therefore, be acceptable. The Chinese say that these fish were first brought to Amoy from Japan, where they are indigenous, being found in a tepid lake on the summit of the Laconie Mountains, probably the crater of an extinct volcano.

The Mandarins avail themselves of this fairy family as garden ornaments, frequently introducing them between plates of glass in the interstices of their favourite rockwork, which they render water-tight by a varnish, which they call Tamfoo; or retaining them in porcelain vases, symmetrically disposed on the balustrades of their houses.

They are generally fed on a sort of biscuit made of rice, with, in the colder season, a small quantity of the bark of

the camphor tree, very finely-powdered (called Fangti). During the breeding season the eggs of certain insects are liberally supplied.

Rain-water agrees better with them than the spring-water, for, if there is iron in the soil, they gradually lose their brilliancy, and become of an ashy-brown colour; or, if chalk abounds, or porcelain clay, they become blind, the scales throw out a cottony exudation, like the American blight on an apple tree, and they die.

It is a singular circumstance attending gold fish, that under certain dispositions of their temperament they are seized with a sort of furor, and devour each other; the stronger preying on the more feeble. The Chinese call this disease Chang-poo-Ching. I do not know whether it occurs in our latitude. T. WERTHEIN.

GAPES IN CHICKENS.

I HAVE endeavoured to follow out the excellent suggestions of Mr. Tegetmeier with regard to the “Gapes,” hitherto so destructive to our best breeds of chickens; and, in enumerating the results, I will indicate a mode of operating which may prove of value. I took six *well-marked* cases, and determined to treat three of them with the turpentine fumigation, and three with the direct application of the turpentine by means of a feather passed down the windpipe.

The three to which the turpentine was directly applied lived and did well. To fumigate the other three, I used a case, containing the bird, and a piece of saturated flannel to create an atmosphere of turpentine, and this atmosphere was respired, (at *short intervals*) for several hours, and two of the cases with success, but the third bird died; and, on examination, I found one large worm and five small ones, which were still adherent to the windpipe, and were not at all disturbed from their position.

You can imagine, that I rather hold to the superiority of the direct application of the turpentine, and I have thought much of the best mode of applying this worm poison. It seems to me that there would be an advantage gained, in addition to the application of the turpentine, by causing a small mechanical disturbance to the worms themselves, by some mode which would not wound the windpipe; this could be done, I fancy, by means of a slender bit of whalebone, having left at the end a small button, on to which a small sponge is tied; the instrument is easily made after the manner of a surgeon's “probang.” The sponge may be cut away, little and little, till the proper size and shape are obtained, and will have this advantage, that the turpentine will not drop from it into the lungs; but will be necessarily distributed, by the round or conical sponge, on every part of the windpipe to which worms may be affixed, and which would not obtain, in many cases, by the use of the *flat* feather. I do not know if I have made my suggestion clear; but it seems to me, that it will render the operation more certain and uniform; and if so, it is worth a few minutes' trouble in preparing the little instrument. I intend to use it myself, and shall be glad to hear how it answers to others.

I may mention, as the result of observations I have made, that all my breeds of fancy fowls are equally subject to the disease of Gapes, except the Malays, and in no case have I ever found them affected; this is curious; and I should like to hear if it be a fact confirmed by other observers, or only a curious coincidence.

W. LORT, *Great Heath, near Tenbury*.

GREAT SALE OF STOCK AT TORTWORTH.

AUGUST 24TH AND 25TH.

THE sale of the magnificent stock of the late Earl Ducie took place at Tortworth Court, the scene of the late lamented nobleman's exertions in the cause of agriculture. The fame of the stock had long since spread beyond the shores of England, and we were not surprised to see an immense assemblage, amongst them being many American breeders—men who spare neither money nor trouble to improve their

cattle and horses. Not many years since they bought from Gloucestershire, Mr. Hewer's Hereford bull, "Major," and a number of Cotswold ewes from the flocks of Messrs. Hewer and Cother. It was certain that the sale was next in importance to those of the Messrs. Collings's stock which took place many years ago, and the prices obtained at which are still pointed at by the shallow as evidences of the agricultural folly of the time, but as the summary will show, the prices then obtained were exceeded. In fact it was known that the best short-horns in the world were to be sold at Tortworth, and parties came prepared to have them at any price. Many of the animals are going to America, amongst them the bull, Duke of Glo'ster, for which the American party were prepared to give 1200 guineas—that is to say, they were determined to have him.

The various prices will be found below, therefore we need not say more on that head here. Mr. Strafford, of London, was the auctioneer; a gentleman of great tact and ability, and whose business connections extend to the agricultural communities of America, France, and other countries. The company numbered some two or three thousand, and it may be supposed that this large number of persons consumed no little quantity of the luncheon provided for a smaller number. The catalogue gave full details of the pedigree of the animals. In his introductory remarks on opening the sale, Mr. Strafford stated that it was the wish of the late much lamented and noble owner that the whole of the live stock should be sold for the benefit of the estate, and that his successor was so determined to carry out this intention and to act fairly by the public, that he would not suffer a single head to be bought in for him. The following is a list of the prices:

COWS AND HEIFERS.

- Lot 1.—Bessy, roan, calved January 11, 1840, got by Helicon, (2107 in Coates's Herd Book,) brought 41 guineas. This fine old animal, which came from the stock of the Rev. H. Berry, was bought by Mr. John Morton, for Colonel Cator, of Parkhurst, and we have reason to know that Mr. Morton was subsequently offered 200 guineas for the purchase.
- 2.—Stella, roan, calved April 13, 1841, got by Rockingham (2550); bought for 35 guineas by Mr. Isaac Niblett.
- 3.—Challenge, red and white, calved March 4, 1843, got by Morpeth (7254); bought for 44 guineas by Mr. I. Niblett.
- 4.—Duchess 55th, red, calved Oct. 31, 1844, got by Fourth Duke of Northumberland (3649); bought for 50 guineas by Mr. Tanqueray, of Hendon, Middlesex, a gentleman who has probably the finest herd in the country, and is a large exporter.
- 5.—Victoria, roan, calved April 20, 1845, got by Second Duke of York (5959); 44 guineas; Mr. Allen, Longcroft Hall, near Lichfield.
- 6.—Princess Fairfax, roan, calved Oct. 3, 1845, got by Lord Adolphus Fairfax (4249); 77 guineas; Mr. Grenfell.
- 7.—Nonsuch, white, calved Nov. 1, 1845, got by Duke of Cornwall (5947); 50 guineas; Lord Burlington.
- 8.—Chaff, red and white, calved Feb. 14, 1846, got by Duke of Cornwall (5947); 42 guineas; Col. Kingscote.
- 9.—Minstrel, red roan, calved March 14, 1846, got by Count Conrad (3510); 100 guineas; Mr. Tanqueray, Hendon, Middlesex.
- 10.—Oxford 6th, red, calved Nov. 6, 1846, got by Second Duke of Northumberland (3646); 205 guineas; Mr. Tanqueray.
- 11.—Duchess 59th, roan, calved Nov. 21, 1847, got by Second Duke of Oxford (9046); 350 guineas; Mr. Thorne, of New York, U.S.
- 12.—Mantilla, red and white, calved Nov. 22, 1847, got by Cramer (6907); 110 guineas; Mr. Foljambe.
- 13.—Virginia, white, calved Feb. 6, 1848, got by Petrarch (7329); 75 guineas; Mr. Hall.
- 14.—Pomp, white, calved April 3, 1848, got by the Duke of Cornwall (5947); 65 guineas; Mr. Grenfell.
- 15.—Louisa, roan, calved July 12, 1848, got by Cramer (6907); 78 guineas; J. H. Langston, Esq. M.P.
- 16.—Beatrice, red, calved August 1, 1848, got by Cramer (6907); 87 guineas; Mr. Grenfell.
- 17.—Chaplet, roan, calved April 6, 1849, got by Usurer (9763); 54 guineas; J. H. Langston, Esq.
- 18.—Victorine, red and white, calved July 4, 1849, got by Usurer (9763); 46 guineas; Mr. Grenfell.
- 19.—Horatia, red, calved July 27, 1849, got by Usurer (9753); 30 guineas; J. H. Langston, Esq.
- 20.—Duchess 64th, red, calved Aug. 10, 1849, got by Second Duke of Oxford (9046); 600 GUINEAS; Mr. Thorne, of New York.
- 21.—Oxford 11th, red roan, calved Aug. 25, 1849, got by Fourth Duke of York (10167); 250 guineas; Mr. Tanqueray.
- 22.—Florence, roan, calved Oct. 12, 1849, got by Usurer (9763); 62 guineas; Mr. Robinson.
- 23.—Fatima, red and white, calved Nov. 27, 1849, got by Victor (8739); 70 guineas; Mr. Carr.
- 24.—Mystery, red, calved May 24, 1850, got by Usurer (9763); 200 guineas; Mr. Tanqueray.
- 25.—Boddice, red, calved June 29, 1850, got by Usurer (9763); 115 guineas; Mr. Jonas Webb, of Babraham.
- 26.—Flourish, white, calved Oct. 21, 1850, got by Usurer (9763); 71 guineas; Mr. Rich, of Didmarton.
- 27.—Duchess 66th, rich roan, calved Oct. 25, 1850, got by Fourth Duke of York (10167); 700 GUINEAS. There was great competition for

this beautiful animal, which was ultimately knocked down to Col. Morris, President of the New York State Agricultural Society.

- 28.—Victory, white, calved Nov. 25, 1850, got by Usurer (9763); 80 guineas; Major Blathwayt.
 - 29.—Chintz, roan, calved Jan. 24, 1851, got by Usurer (9763); 70 guineas; Mr. Grenfell.
 - 30.—Finance, roan, calved April 20, 1851, got by Usurer (9763); 90 guineas; Mr. Crawley.
 - 31.—China, roan, calved Dec. 25, 1851, got by Fourth Duke of York (10167); 90 guineas; Lord Feversham.
 - 32.—Bodkin, red and white, calved Feb. 12, 1852, got by Fourth Duke of York (10167); 56 guineas; Mr. Robertson.
 - 33.—Lucy, white, calved March 19, 1852, got by Usurer (9763); 40 guineas; Mr. H. Hall, of Barton, near Woodstock.
 - 34.—Hornet, roan, calved April 16, 1852, got by Contract (10071); 43 guineas; Lord Howe.
 - 35.—Duchess 67th, calved May 16, 1852, got by Usurer (9763); 350 guineas; Mr. Gunter.
 - 36.—Parliament, roan, calved June 5, 1852, got by Fourth Duke of York (10167); 56 guineas; Mr. Grenfell.
 - 37.—Oxford 15th, red, calved June 12, 1852, got by Fourth Duke of York (10167); 200 guineas; Lord Burlington.
 - 38.—Bibby, white, calved Aug. 21, 1852, got by Fourth Duke of York (10167); 51 guineas; Mr. Grenfell.
 - 39.—Pride, roan, calved Sept. 6, 1852, got by Fourth Duke of York (10167); 165 guineas; Mr. Grenfell.
 - 40.—Duchess 68th, red, calved Sept. 13, 1852, got by Duke of Glo'ster (11382); 300 guineas; Mr. Thorne, of New York.
 - 41.—Chance, red and white, calved Jan. 6, 1853, got by Duke of Glo'ster (11382); 56 guineas; Mr. Robinson.
 - 42.—Violet, red, calved Feb. 26, 1853, got by Fourth Duke of York (10167); 48 guineas; Mr. Barthropp.
 - 43.—Snowdrop, white, calved Feb. 26, 1853; got by Fourth Duke of York (10167); 120 guineas; Lord Spencer.
 - 44.—Duchess 69th, white, calved March 19, 1853 (daughter of lot 11), got by Fourth Duke of York (10167); 400 guineas. Lord Spencer and the American party competed strongly for this five-months'-old calf, but it was ultimately knocked down to Mr. Tanqueray.
 - 45.—Lizzy, red and white, calved April 29, 1853, got by Fourth Duke of York (10167); 81 guineas; Mr. Grenfell.
 - 46.—Oxford 16th, red roan, calved May 17, 1853, got by Fourth Duke of York (10167); 180 guineas; Mr. Tanqueray.
 - 47.—Duchess 70th, red and white, calved July 8, 1853 (daughter of lot 27), got by Duke of Glo'ster (11382); 310 guineas; Mr. Gunter.
 - 48.—Parade, roan, calved Aug. 7, 1853 (daughter of lot 14), got by Duke of Glo'ster (11382); 73 guineas; Mr. Grenfell.
 - 49.—Vanguard, red and white, calved Aug. 8, 1853 (daughter of lot 18), got by Fourth Duke of York (10167); 30 guineas; Mr. Phillips.
- The total produced by the sale of the Cows and Cow Calves was 6867*l.* giving an average of 140*l.* 2*s.* 10*d.* each.

BULLS AND BULL CALVES.

- 1.—Duke of Glo'ster (11382), red, calved Sept. 14, 1850, got by Grand Duke (10284), dam lot 11 at the present sale. After some competition, this splendid animal, which is described as the most perfect of its kind and combining the best blood in the kingdom, was knocked down to the American party for 650 guineas. We understand he is become the property of Mr. Tanqueray, Col. Morris, and Mr. Becar, and we have the best authority for stating that these gentlemen, rather than lose him, were prepared to bid to the extent of 1200 guineas to secure the purchase.
 - 2.—Fourth Duke of York (10167), roan, calved Dec. 22, 1846, got by Second Duke of Oxford (9046), dam Duchess 51st, by Cleveland Lad (3407). This was another noble animal, which, after a spirited competition, was knocked down at 500 guineas to Mr. Bell, formerly bailiff to the late Mr. Bates. This bull was purchased at Mr. Bates's sale, in 1850, by the late Earl Ducie, for two hundred guineas, his lordship having given a commission to go as far as six hundred for him. The justly celebrated "Duchess" and "Oxford" cows were purchased at the same sale.
 - 3.—Cornwall, white, calved May 30, 1852, got by Contract (10071), dam Nonsuch (lot 7); 61 guineas; Mr. Mace.
 - 4.—Uncle Tom, white, calved June 15, 1852, got by Fourth Duke of York, dam Ursula, by Usurer; 37 guineas; Mr. Saunders.
 - 5.—Vampire, roan, calved July 18, 1852, got by Fourth Duke of York, dam Victorine (lot 18); 120 guineas; Mr. Booth.
 - 6.—Franklin, red, calved Oct. 20, 1852, got by Fourth Duke of York, dam Fatima (lot 23); 80 guineas; W. P. Miles, Esq.
 - 7.—Cheltenham, red and white, calved Dec. 18, 1852, got by Duke of Glo'ster, dam Chaff (lot 8); 125 guineas; Mr. Jonas Webb.
 - 8.—Florian, white, calved Dec. 28, 1852, got by Fourth Duke of York, dam Florentia by Zenith; 58 guineas; Mr. Dickinson.
 - 9.—Fifth Duke of Oxford, red, calved March 6, 1853, got by Duke of Glo'ster, dam Oxford 11th (lot 21); 300 guineas; Lord Feversham.
 - 10.—Gloucester, red and white, calved April 3, 1853, got by Duke of Glo'ster, dam Beatrice (lot 16); 120 guineas; Lord Feversham.
 - 11.—Francisco, roan, calved April 30, 1853, got by Fourth Duke of York, dam Florence (lot 22). A spirited competition for this lot between the Marquis of Exeter and Lord Feversham, ended in favour of the former at 150 guineas.
 - 12.—Norman, white, calved May 8, 1853, got by Fourth Duke of York, dam Nonsuch (lot 7); 100 guineas; Mr. Robinson, of Clifton, Bucks.
 - 13.—Marquis, red and white, calved June 14, 1853, got by Duke of Glo'ster, dam Mantilla (lot 12); 75 guineas; Earl Fitzwilliam.
- The total amount for Bulls and Bull Calves was 2494*l.* 16*s.* being an average of 191*l.* 18*s.* each.

PIGS.

The sale of Cattle having been thus signally concluded, Mr. Strafford next proceeded with the Pigs, which, though not large in size, are said to be unrivalled in quality. They are a combination of the small white breeds of the Earl of Carlisle, Lord Wenlock, Messrs. Brown, Watson, Wiley, &c. and are remarkable for their peculiar aptitude to fatten. We have not space to enumerate the several lots, but we may say that the

sows, of which there were 30, sold at various prices from 5 gs. to 55 gs. each, and seven hoars went off at 21, 14, 30, 62, 27, 10, and 9 guineas. The principal buyers were Lord Lisburn, Col. Kingscote, Messrs. Field, Thursby, Booth, Barthropp, Gunter, Fryer, Wilson, Nihlett, Robinson, Blathwait, Bengough, Carr, Hyatt, &c. &c. The whole lot of Pigs realized 722*l.* 8*s.* and this closed a day which will long be remembered in the annals of the sales of live stock.

SECOND DAY.

The unfavourable state of the weather, (heavy rain having set in about two o'clock in the morning, and continuing at intervals throughout the day, terminating in a perfect torrent at night,) had a very visible influence upon the attendance of company, which was thin in comparison with the crowds of the previous day, and which no doubt put almost a complete stop to the visit of the numerous ladies who had entertained the intention of being present at the sale of the Cochin-Chinas. For the company who were there, however, a luncheon was laid out with characteristic liberality, and that over, the business commenced with the sale of the

SHEEP;

which were described as being descended from the renowned Flocks of the Duke of Richmond, Col. Kingscote, Capt. Pelham, Messrs. Elman, Barclay, Harris, Rigden, and Webb. There were seventy-five lots of Ewes and Wethers, and eighteen Rams, but we are compelled to generalize the prices they fetched. The full-mouthed ewes sold at from 50*s.* to 130*s.* each; the six-tooth ewes, from 55*s.* to 180*s.* each; the four-tooth ewes, from 56*s.* to 68*s.* each; the two-tooth ewes, from 56*s.* to 140*s.* each; some mixed ewes at 46*s.* each; ewe lambs, from 27*s.* to 54*s.* each; the two-tooth wethers, from 30*s.* to 47*s.* each; and the wether lambs, from 19*s.* to 26*s.* each. Among the buyers were Lord Lisburn, Messrs. J. Webb, Anderson, Little, Wells, Berrington, Bengough, Blathwait, Carr, &c. &c.

PURE SOUTH DOWN RAMS.—The best South Down ram, a four-tooth, was knocked down to Lord Lisburn at 60*l.*; a full mouth ram, Ellman's No. 10, to Mr. Hart, at 21*l.*; a two-tooth to Mr. Grenfield, at 11*l.*; another to Mr. Crisp at 26*l.*; another to Mr. Clifford at 7*l.*; and another to Mr. Holmes at 30*l.* The ram lambs sold at prices from 10*l.* to 25*l.* each, the buyers being Lord Lisburn, Colonel Kingscote, Messrs. Bell, Holmes, Carr, Karney, Clifford, &c.

The sale of the ewes and lambs produced 2176*l.* 5*s.*, and the rams 326*l.* 10*s.*, making a total for the sheep of 2502*l.* 15*s.*

COCHIN-CHINA FOWLS.

The last feature of this remarkable sale now commenced, and appeared to excite as great a spirit of competition as those which had preceded it; but we will only instance a few of the lots, which were 64 in number. "Sir Robert," a celebrated prize bird, bought at Mr. Potts's sale for forty guineas, was knocked down to Lord Ducie at 27 guineas; a cockerel, falcon-hocked, and two beautiful pullets, 23*l.*; a cockerel and two pullets, clear and fine, 20*l.*; three chickens, hatched 18th June, 16*l.*; cockerel and two pullets, 14*l.*; ditto, 12*l.*; ditto, 15*l.* 10*s.*; *cum multis aliis*, producing, in the aggregate, no less than 340*l.* 4*s.* for the poultry.

So ended the sale of this far-famed stock; and although it was gratifying to many a man there to witness, in the prices realized, an ample vindication of the spirit and enterprise of the deeply lamented nobleman who had devoted so much of his time and attention to its collection, yet was there withal a predominant feeling of melancholy at its dispersion, and of abiding regret for its sorrowful occasion. That the name of Ducie will long be held in deserved veneration by the agricultural world was strikingly evinced in the expression of many a countenance on Wednesday last, at the sale at Tortworth Court.

At the sale of Mr. C. Collings's short horns, on the 11th of October, 1810, six cows brought 1596*l.*; one, (Lady) 14 years old, brought 206 guineas; her daughter, (Countess) 9 years, 400 guineas; a bull, (Comet) 1000 guineas; seven bull calves, under a year old, 655 guineas; seven heifers, 808 guineas.—At the sale of his brother's stock, a two-year-old cow brought 331 guineas; a five-year-old, 370; a year-old bull calf, 270.

SUMMARY OF THE TORTWORTH SALE.

	£.	s.	d.	£.	s.	d.
49 Cows and Heifers	6867	0	0			
13 Bulls	2494	16	0			
62				9361	16	0
30 Sows	534	0	0			
8 Boars	187	19	0			
38				722	8	0
79 Lots Sheep	2176	5	0			
18 Rams	326	10	0			
97				2502	15	0
64 Cochin Fowls				340	4	0
				£12,927	3	0

SUMMARY OF THE CATTLE SALE AT MR. C. COLLING'S, ON OCTOBER 11, 1810.

47 Head	7115	17	0
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SUMMARY OF SALE AT MR. R. COLLING'S, SEPT. 1818.

61 Head	7484	0	0
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Gloucester Journal.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

ROSES TO BLOW AT CHRISTMAS (M. J.).—Our correspondent has Tea, China, and Hybrid Perpetuals, "now breaking fast," and they are not yet pruned or potted. These, therefore, must have been started early last spring, and kept up to their work till late in May, and early in July the season's work was finished. They then went to rest, and by the middle of August they are thus "breaking fast," or starting into new growth. Now, to get these to bloom by next Christmas do not prune them nearly so close as you would for spring planting; cut the very small twigs out altogether, and only shorten the best shoots one-half their length; and, unless the roots are very much cramped indeed, you had better not repot them—all the feeding they require may be given in liquid-manure. It requires a great deal of care and long forethought to get Roses to bloom well at Christmas.

STRAWBERRIES (Ibid).—You "want Strawberries at the same time" (Christmas), and you have Alice Maud, Keen's Seedling, and Black Prince. When you wish your Strawberries to be ripe, and fit for table, is about the usual time to begin forcing them; therefore, it will be of more interest to let us first hear of your own plans for forcing Strawberries.

SEAKALE FORCING (Ibid).—A cucumber-house will be ten or fifteen degrees too hot for Seakale at Christmas—at all events, too hot for one who does not know the right time to introduce the roots. Take our word for it, you will burn your fingers with the three articles, and in each of them—Roses, Seakale, and Strawberries—for the Christmas dinner-table. In attempting to outstrip the globe you will break down, we fear. Read Mr. Errington's papers again.

DISEASED COCHIN (An Amateur).—The symptoms described, trembling of the legs, &c., are those of a disease which may be termed leg weakness, and which is very difficult of relief, from the inability to rest the affected parts. I have tried various remedies with but little advantage, and am now giving small doses (one grain) of citrate of iron twice a-day, with apparently some benefit. If there is any feverishness, the citrate had better be preceded by a single dose of calomel—about two grains.—W. B. TEGETMEIER.

PACKING CAPE BULBS (Constantia).—The way to pack these, and all other bulbs, is quite easy. Let them be looked after when they are in flower, and marks put to them; and at the end of the rainy season, and before the leaves are quite dead, let them be dug up, taken home, and laid out to dry for a week or ten days, just as we do with onions; then tie each sort in a piece of coarse brown paper, and put numbers, or names, inside with them; put the whole into a strong wooden box, and write the address on the wood, or lid of the box. Your box would be a good windfall to some people out there—so many choice things would do to divide, and set off lots of common rubbish. Be sure, therefore, and see it safe on board, and charge the captain to give it into the care of a respectable ship broker at this end of the journey.

PILLAR ROSE (Ibid).—Pray be advised not to use any of the Roses as a pillar decoration in the conservatory. They are so liable to insects that they will smother your other plants with tobacco-smoke or green fly. The Cloth of Gold flowers well in large houses, but we hardly know "a deep red one" that would.

VALOTTA PURPUREA (Ibid).—"I have a fine *Amaryllis Valotta purpurea*, now going out of bloom; should I repot it and keep it warm till the leaves turn yellow, as you recommend for bulbs in general? or should I take it out of the pot, and bag it up in wadding, or paper?" Gardeners were just puzzled in the same way when the bulb was first introduced; and the best of them could not grow it more than three seasons, and hardly that. It was then thought as difficult to manage as *Disa grandiflora* has been these last twenty years; but now, as we have learned the kind of places in which they grow—the margins of peaty bogs, where the leaves keep green all the year round—there is no sort of difficulty about them. You may turn your *Valotta* out-of-doors, give it plenty of water till the frost comes, and then keep it in a cold frame, with *Ixias* or *Gladioli*, till the middle of next May, never letting the soil get quite dry. When you plant out the *Dahlia*s, next May, you may plant the *Valotta* out too; put it under a south wall, with a saucer of water under it, till it shows for bloom in July or August; then take it to the parlour, and when done flowering repeat the same mode of treatment. It will keep healthier by being out a few months in summer.

BLOOD IN A COW'S MILK.—*Greenhorn* says—"There is a degree of blood in my cow's milk, leaving a pink appearance at the bottom of the pail after the rest of the milk has been poured off. Sometimes it is more apparent than at other times. I parted with a cow I had before for the same reason. My cow had the felon during the wet season. She looks well, but fell off in her milk after she had the felon." Give her one pound of Epsom salts as a draught; foment the udder with warm water, and apply a little camphor ointment to the teats.

MAGNOLIA GRANDIFLORA NOT FLOWERING (M. M).—A plant, fourteen years' old, and nearly twenty feet high, against a south wall, and never flowers, cannot be the real Exmouth variety of *Magnolia grandiflora*. Probably it is a seedling, or one of the kinds with the underside of the leaf pale green, and they are very shy indeed, and not worth growing. The true flowering *M. grandiflora* is quite a rusty-brown colour on the underside of the leaf. If this fine specimen were our's, we would give it a severe root-pruning about the end of September. We would measure off a yard all round the front of the stem, and dig out a trench on the outside of the mark, as deep as we could find roots, cutting off every morsel of a root that was more than a yard from the stem; and we would fill the trench with poor, light, sandy earth. If that did not cause it to flower all over in two years, we would cut it down to near the ground, in April, and inarch three or four of the best shoots that issue from the stool with the true Exmouth *M. grandiflora*, and the strength of the old roots, with fresh soil put into the trench, would soon make as good a plant as the present.

SLUGS AGAIN (1001).—Invite them to a feast, and betray them while they are at dinner. Mr. Barns found brewer's grains the most enticing; he laid little heaps of it along the walks, and went out in the evenings, sometimes at night, with a light, and dusted them with lime. Fresh cabbage leaves dipped, one after the other, in a pail of greasy water—that in which a ham had been boiled in is best—and laid down in their tracks, is a temptation they cannot withstand; they cling to such leaves like bees. Now pick up the leaves, and carry them to somewhere and scrape off the guests, and do as you like with them. The leaves will do again two or three times.

GERANIUM CUTTINGS (Ibid).—Had you been an old subscriber you would have learned, long ago, that the open border, and full in the sun, is the best place to root bedding Geraniums and all other Geraniums in; and that glass frames, lights, and such helps, are only really useful in the hands of good gardeners and practical amateurs. You have been reading the best book only for thirteen months, and you expect your cuttings to look well! Where did you hear of shading Geranium cuttings in the summer, or autumn; or of lowering the temperature at night for any cuttings whatsoever? It is only one in a thousand who can err in these simple matters. In future, put in your bedding cuttings when you can spare them, any time from Midsummer to the end of August, on a south border, in rows six inches apart, and three inches from one to one in the row, and as shallow as you can get them to stand firm. All through September such cuttings will do in the bottom of a cold frame, if there is glass at hand to put over them when the weather gets cold. *Cuttings of Verbenas and Petunias* must be put under confinement, as they are soon shrivelled by sun or dry winds. October is a good time to put in cuttings, in a rough way, of bedding *Fuchsias*; cut strong pieces six inches long, open a *spit trench* across a dry border, and place the cuttings an inch or so apart against the cut-side of the opening. Let full five inches of the cuttings be covered with the soil, and in hard weather, or before winter, mulch round them, or all over the border, with some short dung, and next May they will push up as strong almost as if they had roots when they were first planted. We know those, who, in October, 1822, were three days cutting common broom tops, about eighteen inches long, placing them round newly-planted young trees on a sandy bank, to save them from hares and rabbits; the soil being sand, and recently trenched, the broom had to be thrust well into the ground, and nine out of ten of the pieces rooted so firmly before next April, that it required a good pull to get them up. Five hundred kinds of plants, including apples, pears, and plums, &c., will thus root in a nice, moist, soft sandy border, if the winter is anything like mild, and every one in a thousand-and-one may prove this next winter.

CROSSING (M. A.).—There is no treatise on the subject; but most of our books and periodicals now give explanations and directions on cross-breeding. The subject is *not* "thoroughly understood" by any one; it was practised both here and on the continent two hundred years ago *certain*, and some one let the secret die with him; the "great impulse" is of recent date, comparatively. You shall hear something of it after awhile.

HEATING A SMALL GREENHOUSE (T. M.).—The house is nine feet by six feet, seven feet high at back, and three at front. It is to be heated to 55° in winter, and so as to have bottom-heat. It strikes us that your cheapest plan would be to have a small boiler, costing, with two flanges, and an iron-pipe about two feet in length, somewhere about £2. Join these iron-pipes with leaden ones, and conduct these into a tank, as wide and as long as you can make it convenient, made of deal, like a brewer's cooler, some four inches deep, and covered with slate; or run the four-inch pipes through a small chamber, and so as you can shut off or on atmospheric heat. In either case, in severe weather in winter, if you do not give attendance late at night, you must be at the fire early in the morning. For the purpose you mention, such a heat would not be necessary until March or April; though, to be sure to have *Achimenes* at Christmas, or even after the end of October, you would want the heat specified. Is there no mode you could heat such a small house from the kitchen-range? Of course position will determine that.

GREENHOUSE AND STOVE UNDER ONE ROOF, WITH A PARTITION BETWEEN THEM (A Learner).—You can do no harm in filling the pit in the hothouse with tan, in the middle of February. But, though that will greatly increase the temperature of the house, still it will not be sufficient to grow things generally requiring hothouse treatment, unless you give more fire-heat than will be necessary in the greenhouse department merely to exclude frost. If the same pipes pass through both, without stop-cocks, your only alternative is to give more heat, and then give more air to the greenhouse.

PRUNING VINES (Ibid).—Do this any time after the leaves turn yellow. If well managed on the spur system, you may safely prune to one eye; if at all doubtful, to two.

CAMELIAS POT-BOUND (Ibid).—See an article by Mr. Fish last week, and also to-day. Do not give a large shift now, unless you can take the plant into the house, and keep it close for a fortnight afterwards; gently pick out the pot-bound roots, and trundle the new soil among them. If the plants are large, we would use manure-waterings, and shift next April or May, when the young wood was pushing; but a moderate shift will do no harm, if done early in September.

FLOWER-BEDS (W. H. O.).—An entrance gate, between two nice lodges, opens on a level circle of gravel, or nearly a circle, with the front of the house just opposite the lodge-gate; in the middle of the gravel, and between the gate and the front-door, is an oval piece of grass, sixty feet long by thirty feet across, in the direction of the front-door. The carriage-way, or "coach-ring," is all round the oval of grass; but there is "a short cut" between the lodge and the front-door—an eight-foot walk through the centre of the oval of grass! We have often heard it objected to make two halves of a cherry; but the idea of making two halves of an egg, even of a grass egg, we believe never entered the brains of man till that very oval was cut through, giving one the idea of the parish fire-engine being kept in the house, for then, the shortest cut to get at it, on an emergency, is certainly the best, and across the grass. The owner now wishes to do away with the grass oval altogether, and to make flower-beds on the space; and he inquires if it is in character to make stone-edgings to the beds, instead of grass. This is a very good idea. The

front flower-garden will be on gravel, as we gardeners say, and then it will be much better looking, and more in character, *without* turf-edgings round the beds; box, wood, stone, slate, or Hogg's tiles—anything, in short, is preferable to grass-edgings for flower-beds on gravel. Pray arrange the beds so that no one may pass from the front-door to the gate easier than round the outline of the beds. A *convenient* walk, or path, in such a place as this, is just as much violence to the principle of taste, if ever there was any such, as allowing a public path to run straight through a parish church.

A DEALER EXHIBITING.—A *Looker-on* says that a party who took a prize for ducks, at the Baker-street Exhibition, is a dealer. Before we say more, our informant must furnish us, confidentially, with his real name and address.

MANGLES'S VARIEGATED GERANIUM (W. S.).—It is not unusual for this and other Geraniums to produce white leaves. In all probability, a change of season and change of soil will render the leaves of their original colour. Your *Pansy seedling* is very ordinary.

HERACLEUM GIGANTEUM.—H. Y. W. wishes to know whether this plant is of any use, or is merely curious and ornamental? We know of no use to which it has been applied, except that we have seen the stems employed as light poles for various purposes in garden work. It is probable that rabbits, goats, and swine, would eat the leaves, for they are very fond of those of the common Cow Parsnip (*Heracleum spodylium*). The footstalks of this, and of the Siberian Cow Parsnip (*H. Sibericum*), are also peeled, dried in the sun, and stored in bags, in some dry place; they become very sweet, and are considered a great delicacy by the inhabitants of Kamschatka, &c. A strong spirit is obtained from the stalks.

CLUB-ROOT (G. Waters).—This disease will not attack your Cabbage-worts if you raise the seedlings on a plot where they have not recently been grown; keep them well watered, giving liquid-manure made from soot occasionally, and sprinkle a little spent bark amongst them, and over the surface, between the rows, after planting-out. Slow growth and deficient moisture are great promoters of this disease.

SHANGHAI FOWLS (E. W. M.).—The two first numbers of *The Poultry Book* contain full answers to all your queries.

POULTRY HOUSE (Poultry).—It would be impossible to give all the details for erecting one such as you require, without plans, &c. In the first number of *The Poultry Book* you will find these.

SHANGHAI HEN (M. A. B.).—There is nothing the matter with your hen. Let her remain on her nest for three weeks, for she is only broody. Her system requires a rest from egg-producing. At the end of that time shut her out from her nest, and in a few days she will again begin laying.

VINE IN POTS (A Reader).—Apply to Messrs. Hall, Virtue, and Co., Paternoster Row. The shoots cut back to two or three eyes will usually require no further pruning.

CALCEOLARIA SEEDLINGS (M. H.).—They arrived in excellent condition. No. 43. Good form; rich mottled-crimson. No. 29. Too flat; colours confused. No. 10. Good form; crimson, with cream-coloured edge. No. 35. Too flat; straw-coloured, spangled with small, crimson, kidney-shaped spots. No. 27 was crushed. No. 23. Too flat and small. No. 5. Form good, colour creamy, with large, regular spots of plum-colour; a very good flower. No. 15. Good form; very pale straw, with a few round spots of pink; an excellent flower. No. 33. Too flat; creamy, with plum-coloured markings. No. 11. Yellow, with crimson, small spots. If No. 32 is a very dark crimson, slightly variegated with paler crimson, it is a very beautiful, good-formed flower. We say *if*, because the number was between that and two other flowers.

COOKING THE VEGETABLE-MARROW (B. le B.).—How can we say which is "the best mode," since, as Sam Weller assures us, "tastes wary?" It may be boiled whole, and eaten as Asparagus; it may be boiled, and mashed like the Turnip; it may be boiled, and served up with white sauce; and it may be made into soup, according to the recipe we gave for so cooking the Himalayah Pumpkin.

ONION WEED (J. B. H.).—We have no experience of the efficacy of soap's waste in destroying this weed. We should do as you propose; fork it out, and cover the places with salt so thickly as to destroy all vegetation.

TO CONSTRUCT A GREENHOUSE SO AS NOT TO BE A FIXTURE (S. O. L.).—Let it be a span-roofed one, and the pillars of its sides merely fitting into sockets in the foundation, so that they may be moved as easily as posts for drying linen. *Umbrella trellises* will do for climbing Roses, or any other plant with long pendulous branches.

BOTANY (Medicus).—We cannot undertake to teach the rudiments of sciences connected with Gardening and Natural History. There are series of papers which will probably suit you in *The Family Tutor*, now publishing in fortnightly numbers.

NAMES OF PLANTS (J. O. P.).—*Achillea ptarmica pleno*. The prettiest of all the Achilleas. (*A New Subscriber*).—*Cryptomeria Japonica Lobii* is a dwarf. Your specimen is of *Juniperus Deoniensis*. You may rely perfectly on Messrs. Veitch. (*A Surrey Subscriber*).—All the fruit crushed and fermenting. Three plants had no numbers attached. No. 1 appears to us to be the *Magnolia conspicua*. 2. *Chimonanthus fragrans*. 4. *Spiraea Douglassii*. 5. *Spiraea hypericifolia*. 7. *Sedum latifolium*. 8. *Taxodium distichum*. No. 9 appears to us to be, the *Cupressus sempervirens*, and No. 11 the common Red Virginian Cedar, *Juniperus Virginiana*. The three without numbers, are as follows:—*Andromeda floribunda*. The other two without numbers; are *Rhododendrons* the smallest is the *Rhododendron ferrugineum*, the other is *R. dauricum*.

ERROR: No. 254, page 372 (W. X. Y.).—Your Trefoil is *Trifolium elegans*, not *fragiferum*.

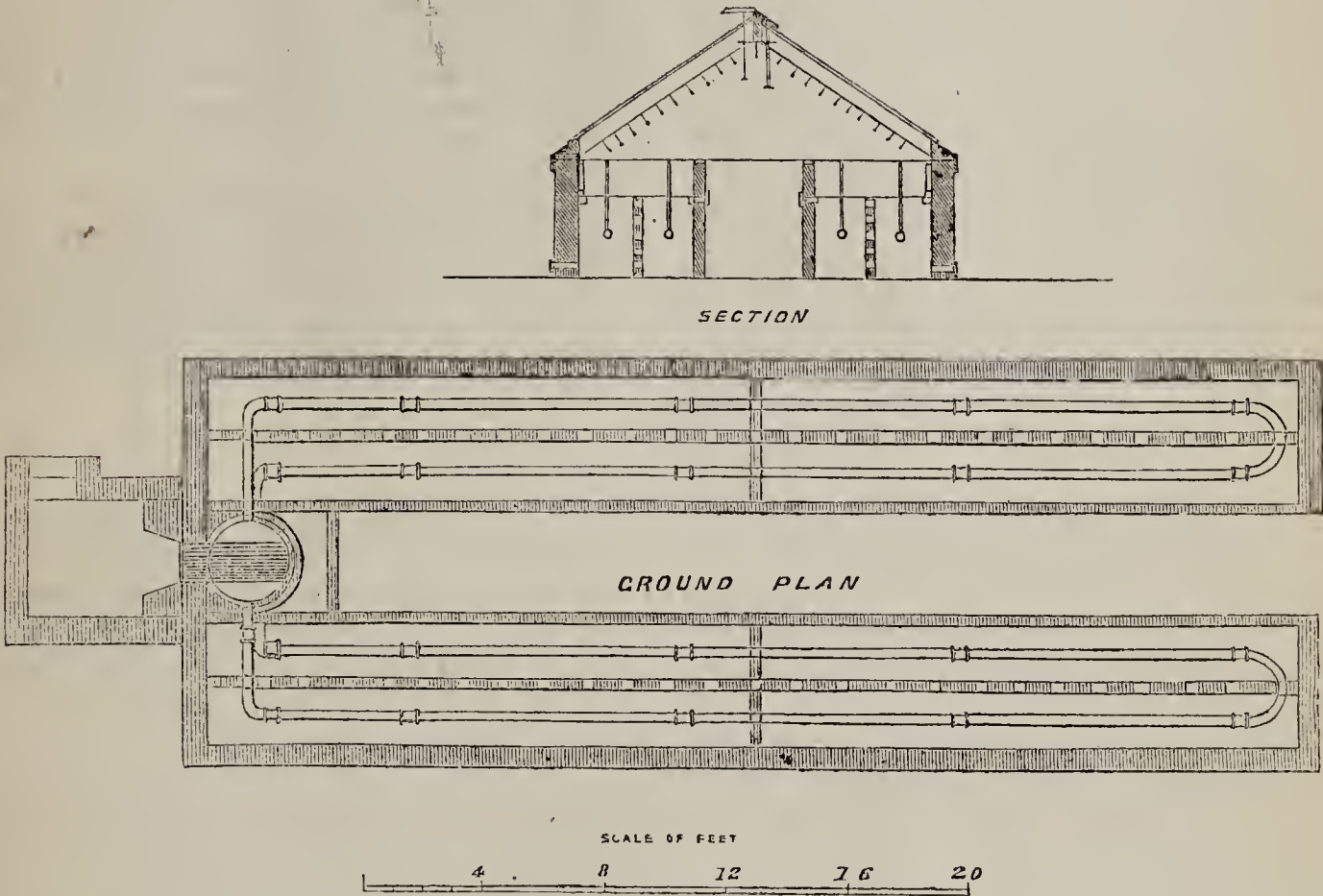
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WEEKLY CALENDAR.

M D	D W	SEPTEMBER 15—21, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
15	TH	Flounced Chestnut; woods.	29.578—29.398	63—45	S.	11	37 a. 5	14 a. 6	2 33	12	4 55	258
16	F	Chestnut; wood sides.	29.817—29.682	61—34	N.	—	38	12	3 53	13	5 16	259
17	S	Frosted Orange; burdocks.	29.849—29.811	62—37	E.	—	40	9	rises.	☺	5 37	260
18	SUN	17 SUNDAY AFTER TRINITY.	29.643—29.226	63—53	E.	84	41	7	7 a 0	15	5 58	261
19	M	Convolvulus Hawk; gardens.	29.639—29.203	63—43	N.E.	03	43	5	7 15	16	6 19	262
20	TU	Sun's declination, 1° 2' N.	29.593—29.531	65—45	S.E.	23	44	2	7 30	17	6 40	263
21	W	EMBER WEEK. ST. MATT.	30.164—29.605	57—34	W.	01	46	0	7 48	18	7 2	264

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 67.2° and 46° respectively. The greatest heat, 84°, occurred on the 17th in 1843; and the lowest cold, 29°, on the 17th in 1840. During the period 101 days were fine, and on 81 rain fell.

CUCUMBER AND MELON HOUSES.



THE enclosed is the plan of a Cucumber and Melon-house that was erected here last spring, which, being somewhat different to any I had ever seen before, and so much admired by all who have seen it, has induced me to send you this copy; if you deem it worth insertion in your useful publication it is at your service. I can confidently recommend all parties about building a Cucumber or Melon-house, or combined as this is, to follow the annexed plan, as I think nothing can answer the purpose better. The plan is very simple, and will be understood by the generality of your readers. But to such as are little acquainted with these matters, a few explanatory remarks may be useful. It will be seen, by the section or elevation, that the house has an equal span-roof, the gable ends of which face north and south; the north end being entirely bricked up to the roof, and at which end is the furnace. The length of the house is thirty-seven feet, and the breadth thirteen feet, outside measure. The height of the ridge from the ground level is eight feet six inches, and the outside wall, which is a nine-inch one, is four feet high. This sets the roof sufficiently high to train the plants one foot below the glass, and allows plenty of head-room beneath, and it also forms a very desirable angle for the purpose, which is about 34° or 35°. The ground plan shows the passage up the middle, which is three feet wide, and on each side of which is shown the chamber. The arch is intended to represent the situation of the boiler,

which, it will be seen, stands inside of the house; and it is surprising what a small quantity of fuel is required to boil the contents; though we have only boiled it once, and then merely for a trial, which was accomplished in about twenty minutes. The pipes are four-inch bore, and cast with gutters on the top, which I have shown in the section, and also the method of supplying them with water, by a small pipe standing perpendicular in the gutter of each length of piping, and passes through the bed of soil to one inch above the surface, and is formed like a funnel at the top. The ground plan shows the direction in which the piping is fixed in the chamber, and also the pigeon-hole wall that the slates of the bed rest upon. But this is only introduced for the sake of using up a quantity of waste slate that was laying about; otherwise, if the slates are thick enough, and sufficiently broad to reach across the bed, there is no necessity for the wall. The house is divided in the middle by a partition, constructed similar to the end elevation, for the purpose of keeping the Cucumbers distinct from the Melons, as by this means, we can regulate air and atmospheric moisture in each apartment as we think proper. Had we thought it necessary, or wanted one, and for other purposes, we would have had valves at the partition, to stop the water from circulating farther than there, which would be an excellent plan to such as have only small means, and have to reserve much for bedding purposes; for a better place could not be built than the south end

would be, while, at the same time, there might be Cucumbers at the contrary end throughout the winter; and should there be any fear of frost affecting the bedding plants, or whatever else might be there, the valves would only require to be withdrawn, and there would be the preventive.

But to return to other remarks in the plan (the section), in which is shown the chamber on each side of the passage, and also the position of the piping therein, and the bed for soil above. The side of the bed next to the outside wall is formed by slates, set up edgewise, which are supported by projecting bricks, left a foot apart in the outside wall, and thereby leaving a cavity between the bed and wall for the hot air to ascend into the house when required; but at the top of the cavity there is a narrow slip of board, hung with hinges, and opens as the lid of a box, so that by this means we can confine the hot air in the chamber, or admit it into the house, which we find a great advantage; for it is evident, that in bright, sunny weather the interior of the house would be better without artificial heat. And, as another advantage, when the chamber is confined, it requires very little fuel indeed to produce sufficient bottom-heat; for when the pipes are once heated, and so confined, they retain the heat a long time. The walls beside the passage have also projecting bricks to support the slates which form the bottom of the bed; and in the same course of bricks there are others left out for the hot air to enter the house when required. But these are all under control, as well as the cavity, though on a different principle. They are regulated by sliding shutters, which cover or uncover half the length of the house at once. The ventilators, as shown in the outside wall, are exactly on the same principle. Those immediately under the wall-plate are intended to carry off any damp that might lodge about the stems of the Melons, and also to cause a more active circulation of air

when the fruit is ripening, and in case of bedding plants being deposited there in autumn or winter. The bottom ventilators communicate with the heat chamber, which, of course, warms the air as it passes through into the house, so that air may be safely admitted there at any time. The plan of admitting air at the top is shown in the section, which is nothing else but two narrow boards hung by hinges to the ridge-piece, and are set open by irons attached to them, and which hang just within reach up the passage.

They have in each four holes, an inch apart, which admit of an iron pin that is screwed horizontally to the underside of the ridge-piece, so that, by lifting up the shutter by the iron handle, and at the same time pushing it on to the horizontal pin, you may expose a space for the admission of air, from one to six inches, at the top of five lights, which is half the length of the house; and the same may be given on one side of the ridge-piece or the other, as the lights are all six inches shorter than the rafters. The rain is prevented from entering the house at the ridge by two grooves in the ridge-pin, which is cut through at every rafter, and conveys what few drops enter down to the wall-plate, and from thence is carried with the surface water to a cistern at the north end, which supplies the boiler through the wall. Upon the whole, nothing can be more simple, or more compact.

I may add, lastly, that as an experiment, we placed about six inches thick of broken stone at the bottom of one bed, and the other we filled entirely with soil, and we have not been able to perceive any difference, either in the growth of the plants, or crop of fruit, as they seem all good, and few plants present a more pleasing effect than a good crop of Cucumbers and Melons dangling from the roof of a house.—J. THOROUGHGOOD, *Latham House, Ormskirk.*

WE have numerous accounts on record of seeds having vegetated after long periods of rest, away from atmospheric changes, after being boiled for different lengths of time, and after resisting the pestilential influence of sewer and soil-drains for many years. Plants have been raised from seeds which ripened in the *herbarium* of the botanist, and remained there for a life-time; and there is hardly any other way of transmitting the seeds of Ferns from one country to another than that of cutting off specimens, or pieces of the Fern-leaves, before the seeds are quite ripe, to dry them, and then pack them where no moisture will reach them, and they are safe for many years, the dust-like seeds of Ferns being even more tenacious of life than the larger kinds of seeds; but to retain its power, it must be in the seed-vessels, and on the leaf which bore them, and the leaf must be gathered and dried like hay, before the seed-vessels are ripe enough to open and discharge the seeds.

In the same way, and under similar circumstances, we have presumptive evidence that pollen may be gathered, and harvested so as to retain its subtle power of impregnation for any definite period, or, at least, as long as Fern-seeds retain their powers to vegetate. This is a new field of inquiry into which we would lead the young gardener and the amateur.

The improvement of races of plants is not destined to stand still more than other improvements, and nothing would tend more to the speedy termination of an experiment than that we had control over the supply of pollen, so that we might use it when and where it was most convenient to ourselves. The power which we now acknowledge in conducting experiments, extends

no further than getting the two parents into flower at the same time, or within short periods of each other. In anything beyond that, we are, at present, powerless; but we see no just reason why we should be so confined with pollen more than with Fern-seeds; preserve them, or say, at once harvest them, exactly on the same principle, and the one will keep just as long as the other. Mr. Beaton once said, many years since, that he believed pollen of Rhododendrons might be gathered on the Alps of Tibet, and sent over to fertilize our best seedlings here. After hearing all that could be said for, or against, this view of the subject, he remains still just of the very same opinion. We have had reports of failures in trying to keep or harvest pollen from Australia, India, North America, and from many people in this country, but from none of them have we heard one word about the process of ripening and drying pollen; therefore, we shall assume that no one has yet mastered the seeming difficulty of harvesting pollen for future use, and that the failures recorded were not due to the impracticability of the thing, but rather to the want of a knowledge of how pollen ought to be harvested, and that want is what we now propose to supply. Pollen, fifty years old, in a herbarium, was found, under the microscope, to yield to moisture exactly as fresh-gathered pollen would do—the little bags distending till they burst; *the matter discharged differed in no way from that from a recent anther.* The seeds of Ferns have been brushed off from a specimen dried for, and kept in, the herbarium for more than fifty years, and produced plants. Who can describe the difference in size and weight between a pollen-grain and a Fern-seed;

and who can believe it possible that the seed would keep fifty years, and that the pollen-grain would not, under similar circumstances?

The failures in saving pollen arose entirely and altogether for want of thought in the harvest-men who undertook the experiment; they allowed the anthers to become ripe before they gathered them, or so near to ripeness that they opened during the process of drying. Now, if we allow a Fern-seed to break its case and get into the open air, or the anther is allowed to open its valves, as the case may be, we might just as well attempt to lock up electricity as to secure the Fern-seed, or the pollen-grain, from destruction. The case of the Fern-seed must never open until it is rent asunder by the swelling of the seed itself, under the bell-glass of the gardener, on the damp sand. The anther must be equally guarded from every influence that would excite it to open until it is wanted, or rather its contents, for the stigma of the recently opened flower. All that we have actually proved on the subject is this, that if we extracted anthers and stamens long before the anthers were ripe, that the pollen in them would ripen, and be in use, and fit to cross, after the lapse of six months; and that pollen, gathered when ripe and flying out of the anthers, though kept with the greatest care, would not fertilise the stigma of the parent plant at the end of a month. We believe the driest atmosphere we can keep in our rooms and drawers is far too moist for the preservation of pollen for any length of time after being actually exposed to it; and we also believe that an anther would keep as long as a piece of bladder under the same influences, and that it is as impervious to moisture as the bladder, and, therefore, as capable of preserving pollen as is the seed vessel of the Fern in retaining the vitality of the seed—a fact that no one now questions.

If the flower of a *Geranium* is picked off as soon as it opens, although the anthers may appear to be only half ripe, there is sufficient moisture in the flower to feed the anthers and cause them to burst in two or three days. Therefore, if it was intended to dry that pollen for preserving, it could not be done, as no method could be adopted to save it if once it is in contact with the air; that flower was too far gone to be harvested for pollen, and it would be much about the same with nine flowers out of ten from other plants.

Then, it follows, that when we wish to make dry specimens of flowers, with a view to save the pollen, we must gather them a short time before the flower opens; or when there is more than one flower on a stalk, and they are known to open in succession, it will be as well to let the first of them just open before you cut the stalk, and let it take its chance; if we can get it and the anthers dried in such a manner as that the latter do not burst, so far so good; but, if not, the loss of the former flower will not be much, and we can reckon on some, or all the rest, to ripen the pollen without reaching that point of ripeness when the anther should burst.

Here we are met by a wise provision of nature, which is familiar to any one who has been in the habit of dis-

secting flowers, and which greatly assists us in this work. The anther is the first part of a flower which comes to its full size, the stamens lengthen out very gradually, the petals no less so, and the stigma is hardly ever up to its full-size so soon as the other parts; but the anthers, on the contrary, are of full-size when the flower is only in the bud. In some plants they are full-grown ten days before the flower opens. *Wheat*, for instance, is impregnated by its own pollen before the top of the ear issues from the sheath, and before stamens come into existence, or nearly so; therefore, it is impossible that one kind of wheat should naturally fertilise another wheat in the field. The moment the wheat pollen is shed, the stamens begin to lengthen, carrying up the empty bags on their summits, till, at last, they push them right into the open air; then the farmers believe the plant is in blossom.

We have met with a hundred instances in which the anthers were in full-size, and all but sessile; that is, without a sign of stamen below, while the flower is a mere bud. To cut a full-sized anther at that stage of the flower would give one no signs that anything like dry dust should ever be formed by it. It is a solid mass of tissue, apparently like any other soft portion of the plant. Now, supposing that one of these flowers were cut off ten days before the pollen would be ripe, and that it was dried very slowly, after the manner of specimens for the herbarium, if there were sufficient moisture in the stalk and surrounding parts to keep the anthers from shrivelling, there is no question about the pollen ripening during the process of drying. The full-sized anther requires no more room when the flower is quite opened than it occupied some days before; hence, the greater facility of getting the pollen well-ripened after the flower is cut, without causing the anthers to burst open.

Suppose, now, that we have a truss of *Geranium* flowers well up in the bud, dried, and ready for the herbarium, with the pollen ripe, but the anthers not likely to burst or open; is there anything in reason, or philosophy, which can contradict our surmise, that that pollen may be kept in that state for many years, and be as good when the anther was cut as it was the first day? We think not.

The next question is about the best way to dry the flowers; and here it must branch into wide-spread diversities. Some flowers, with thick substance in the parts, say a *Gloxinia* flower, will require to be dried as fast as it can safely be done, or the great store of sap will, assuredly, run the anther to the bursting point before all is sufficiently dried. Another, say some slender *Heath* flower, with hardly any substance in it, or round about it, in the leaves or the shoots, must be dried as slowly as possible, in order to give time to the full development of the pollen; and all intermediate flowers must be dealt with according to the best of our judgment, until, by practice, we come to understand more of the subject than anyone can lay claim to at present. What we have to bear in mind, is, that if the anther once opens there is no more safety to the pollen; that

the juice in the parts is sufficient to ripen the pollen after the flower-buds and flower-stalks are separated from the plant; and that it is not safe to trust to the anthers getting too near the ripe stage before the flowers are cut off, lest they go on to bursting before the specimen is dried. If all this is kept in view, the rest, about the length of time, and best ways of drying, will easily be found out in the course of practice.

We know of nothing now to be ascertained, from the whole circle of botany and gardening, of so much importance to mankind, as the affirmative to all these suggestions; for, let us be understood only as suggesting the probability of the subject being within our reach.

The way they dry botanical specimens for the herbarium seems as good as any for drying pollen specimens. The first day or two the specimens are spread out, and held between sheets of blotting-paper in a book, the sheets or the position of the specimens being often changed, so that the blotting-paper does not get wet or damp. After a certain degree of drying, some pressure is applied, but this we must not indulge in too far for pollen-drying; the least weight might squeeze a ripe anther to the bursting point, when all would be lost. When the process is complete, the flower-buds, the flower-stalk, and the branch, if any, ought to look as natural and free from stains as an ear of corn, or a grass-stalk from the hay-rick. There is hardly a plant known of which a dried specimen is not kept by some one. Weeds are kept with as much zeal as the most gaudy flowers, and new names are now often determined by old specimens that have been preserved hundreds of years ago. It was from an old flower thus dried that we first took up the idea of saving pollen; on the application of moisture to the old dried pollen it exhibited all the symptoms of vitality, under a lens, that fresh pollen from the garden could do; and knowing the vast stride in the improvement of races, which pollen ready at all seasons would give us, we are anxious to press candidates into the field.

Suppose, again, that we have dried pollen at hand, and that fresh flowers are ready for dusting—take the dried flower, and, with the point of a pin, tear the anther open, then stick the pin through it, and carry it on the point of the pin to the stigma to be fertilised, and draw it two or three times across it, then give your hand a gentle touch to dust off the remaining part of the pollen, and the work is done. The plant may require to be kept out of the draught for some hours, as the old pollen may have to lie longer on the stigma than fresh pollen, before it effects the mysterious process. Who that has a *Japan Lily* now in bloom, that would not wish to have a ripe anther of some spring or summer lily to try his first experiment in crossing? Autumn and spring *Crocuses*, if they could thus be crossed, would give us flowers for the whole winter, and so on through all the families in the catalogue.

There is one more branch of this subject, a most simple one, and yet it seems to have been a stumbling-block to every cross-breeder, here and abroad, who has recorded his exploits. Notwithstanding the utmost pre-

caution in guarding against the access of its own pollen into a flower—and even going so far as forcing two plants in the spring, in order to make more sure of a cross—they tell us, one after the other, that the produce was in nowise different from a natural seedling. We have no record, however, from anyone, of how he destroyed the natural pollen, more than we have from those who failed to harvest pollen, how they managed or rather mismanaged the experiment; therefore, we must presume that they merely extracted the anthers, the moment the flower opened, or just the day previous to the opening, and let them (the anthers) *take their chance*. Here is just where the mistake lies—the anther, or rather, the pollen, is all but ripe in any flower when that flower is fit to open—or, if the extraction is done some days previous, we have seen that the juice in the stamen, or even in the anther itself, may be sufficient to ripen the pollen after the anthers are cut off; and we know the least breath of air will disperse ripe pollen in clouds like dust. Suppose, then, that you had extracted all the anthers from a *Geranium* flower this morning, and let them drop down on the surface of the pot or border, that was not the least security against that very pollen entering the same flower from which it was extracted, and neutralizing the effect of another pollen; the air, or wind, the bees and ants, had the same power, and the insects the same will, to disperse the pollen from the fallen anthers, as they had when the pollen was allowed to ripen side-by-side with the stigma. We have often seen an ant carry a discarded anther a long distance in its mouth, up and down, through all parts of a plant, across the stage, and off to its nest. We never did see an insect carry up the pollen from a fallen anther back to the flower, and actually dust it on its sister stigma; but we see nothing to prevent the possibility of access in some such way, unless the anthers are actually squeezed to death between the finger and thumb the moment they are cut out. One can never rely on success if a single anther has dropped where we cannot find it, so as to have it destroyed on the instant. The fact of letting a single anther escape destruction accounts, plainly enough, for the failure of any single experiment.

D. B.

JULY, August, and September, may be suitable seasons for Poultry Exhibitions, so far as the projectors and their receipts only are concerned; but we have grave reasons for doubting how far the interest of poultry-keepers generally are served by the selection of these months. In fact, the season, and the condition of the birds themselves, so far, at least, as regards all beyond the chickens of the year, are both unfavourable.

With the uncertainty peculiar to our English climate, we know not, especially during the last-named month, whether the weather may prove too hot for a room, or too cold and wet for the partial shelter of canvass. The latter case, we imagine, was very practically exemplified during the late Show at the Surrey Zoological Gardens. There are but few rooms in England, applicable to this

purpose, that are calculated to contain a large number of fowls and their spectators should the weather prove hot; and the means of shelter usually had recourse to are certainly insufficient when wet or cold opposes us. Autumn, indeed, is not to be trusted to, in this country, for schemes that depend so much on weather. Independently, however, of our own comfort, and that of our birds, the latter, we must remember, are then by no means so well able to resist the effect of sudden atmospheric change of intense heat and want of ventilation, or otherwise of cold and damp, as at other times. Nineteenths of our birds are either in the stage preparatory to moulting, or actually moulting, or else recovering from its effects. The constitution, therefore, as is well-known, is then greatly debilitated; everything should be administered that is likely to invigorate and recruit their system, and all risk from cold and exposure should be carefully guarded against; yet this is the very season when our unfortunate, hardly-treated, favourites are dragged from their retirement, and exposed to all the evil consequences we have referred to.

Again, should it happen that a bird has begun to moult early, and, when called upon to appear in the exhibition-pen, has acquired some considerable portion of its new feathers, is it made matter of sufficient consideration as to what amount of injury may be thus done to the plumage itself, placing the mere health of the bird beyond our calculations? Now, our belief is, that an injury to a young and growing feather is fatal to its future perfect development; and are journeies, we would ask, by rail or otherwise, such as the candidates for poultry fame must ever encounter, to be performed without such hazards from rough baskets, and the merciless handling of railway and exhibition officials? But be the weather fair or foul (and who can form calculations, or reckon on probabilities with respect to an English autumn), the old birds, we repeat, are neither in health nor looks for exhibition, and far more wisely should we have kept them at home, in training for the Birmingham, or some other great arena.

Let it not be said, "*Nobody is forced to exhibit; they need not do so, unless they like it.*" Many, it is true, are sufficiently prudent to foresee and avoid the risk; but many others, again, are thus induced to seek either a continuance of past victories, or to atone for past defeats. The committees and managers of these autumnal poultry exhibitions, therefore, are those most in fault; without their prize-list the evil would not happen; and earnestly we would ask them to give their best attention to the means by which a better season may henceforth be selected.

Much more might be said on this topic, for which our present remarks can find no place; to one of these subjects only will we, therefore, now refer. Judges have, at all times, a sufficiently difficult task when they are called upon to pronounce on the relative merits of the poultry submitted to their inspection. Is it wise, therefore, to render their duties still more arduous, by placing the birds before them at a season of the year when many of the points, on which their decisions must

be grounded, are obscured by the naturally imperfect condition of the birds; often, indeed, affecting their form as well as feather? We think that the labours of those who are called upon to undertake the office of arbitrators, on such occasions, are quite sufficient without this additional responsibility, even supposing that allowances for such drawbacks can be accurately made. But how stands the case with exhibitors? Their now ragged and dishevelled, often tail-less, specimens, may have been deservedly honoured in a different form, but, as they are, defeat, disappointment, and discontent, quickly succeed each other in the mind of their owners. Doubtless, a really good bird, however draggled its plumage, and ill-conditioned its present appearance, has that which, in the eyes of an experienced judge, obtains an award of honour; but oftentimes the most favourable recollection of the past, or even anticipation of the future, is unable to atone for its present woful plight. Now, to decide on birds thus circumstanced, is equally unfair to the fowls, and unsatisfactory to the arbitrator.

The legitimate season for poultry shows might range from November to the middle or end of January; since, earlier than the former date, birds cannot be relied on for their recovery from moulting; and after the latter, it becomes inconvenient to send them, on account of the approach of the breeding season. Where summer and autumn exhibitions are desired, goslings, turkey-poults, ducklings, pigeons, and chickens of every race and every name, may occupy the pens, but the older birds will either not be in proper condition to attend, or otherwise occupied at home.

The periods of the year at which their shows should be held are among many matters which poultry-keepers, generally, should give their best attention to; but there are, also, other topics connected with this subject, upon which we may hope that a better understanding may soon prevail.

A rule that heads every prize list is to this effect,—"*That the Judges are empowered to withhold prizes should they consider that the specimens are of inferior quality.*" No regulation, we believe, can be more necessary, and none, we feel convinced, can be neglected with greater injury to any society, its exhibitors, and the public.

A gentleman, whose efficient performance of this thankless task of arbitrator has again and again been recognised by exhibitors, no less than committees and their officers, thus writes to us:—"Your remarks on Poultry Shows and Judges find a ready echo in my own experience: I still more especially concur in the statement of the utter want of policy in awarding a prize to indifferent, and, in some cases, even bad, specimens; for they immediately become extolled by their owners as the very standard of perfection; while the simple fact is, that the competition was at the lowest possible ebb; and probably, also, two or three over-anxious committee-men have thus pleaded: '*I trust, gentlemen, you will excuse our suggestion, but we must indeed keep faith with the public, and so the prizes must be awarded, and not withheld; if these, therefore, are the best birds here, they must have, and, according to our rules (?), are entitled to the prizes.*' The inevitable

consequence is, that a set of fowls go forth for public approval that were entitled only to be rejected from the exhibition as worthless apologies of the birds they were intended to represent. The owners, of course, then claim for them the highest consideration, as being the very acme of perfection. This has, to myself and others also, been the unenviable position into which we have been thrust—viz., either to offend the committee, on the one hand, by withholding the prizes; or, on the other hand, to award them to such poultry as the judges must, at heart, have disapproved of; and this has again and again been done in defiance of the rule that *'the judges are empowered to withhold, &c.,'* to satisfy exhibitors, and to prevent their thinking that *'we are endeavouring to keep back prizes that we ourselves have offered.'* It also tends to bring into discredit the opinions of the judges themselves, and to introduce to the public, at high figures, truly worthless specimens. But, if I mention the evil, the remedy also must not be forgotten; and this I have twice proved to be a most efficacious one. Whenever again requested, however earnestly, to award prizes to undeserving specimens, my reply and position will simply be, *'That, convinced of their want of merit, I have already declined doing so; but, if the party making this request thinks proper to print on the list of prizes, that such and such prizes being withheld by the judges from want of merit, were afterwards awarded by Mr. —, on his own responsibility, without the approbation of the judges, my opposition shall be withdrawn, but certainly not otherwise.'* The promptitude and decision with which such responsibility is declined is singular.

"If those, who, in future years may be called upon to fulfil such judicial labour, should adopt a similar course, the bane will find its antidote, and things will go on smoothly. Every one eventually will regret that indifferent poultry should receive encomiums they do not deserve, simply, as it is said, *'to keep faith with the public'* (in truly Hibernian style), by misleading them."

W.

It has long been a matter of dispute whether Moles cause more of benefit than of injury to the cultivator of the soil which they frequent. In some places, where neatness must prevail, it is impossible that they can be allowed to remain; but in others, where their hillocks can be levelled occasionally, and in some, where even this cannot be done, we have always considered that the destruction of Wireworms, and other vermin which they effect, is more than compensatory for any trouble or injury they may occasion. In this opinion we are very far from singular, and we could quote from the *Quarterly Journal of Agriculture*, and other authorities, many evidences sustaining our opinion.

On the other hand, many practical cultivators of the soil are decidedly of a contrary opinion, and there is no doubt that the general practice throughout the length and breadth of the land is to wage war against the Moles. In justification of this warfare we have many

evidences; and we readily publish the two following, and must leave the question to be decided by the experiments and judgment of our readers.

The following is from the Bailiff of one of our correspondents (G. T. S.):—

"I beg to send you my opinion on the subject of *Moles*. You say that moles do more good to the land than injury; I cannot say I agree with you. I will give you my own experience. I remember well cutting a field of oats that was completely undermined, that broke in and sunk with us at each step we took, like a half-frozen pond; and the sickle would not cut above one-half, and the rest it tore up by the roots. This may be depended upon. I was relating my story, when a respectable farmer, living near, declared that he had a field of wheat in the same way; it came up by the roots. At this present time there is a field of grass not two miles from here, two-and-a-half acres of which are covered with mole-hills. What man can mow this meadow; or what profit is there in not catching the moles? They not only make the corn come up by the roots, but they would make the walls also come down. Our Derbyshire walls, being made of stones loosely piled together, are easily blown down, without the assistance of the moles. Again, the moles always choose the best and driest parts of the land, where the cattle would otherwise like to lie down, but cannot, as they find every step they take burst beneath the surface, in pasture-lands. Black, boggy, light soil, in my opinion, may, at all events, be more injured by moles than other soils."

We look upon these examples as very extreme cases; and, at the same time, we feel convinced, that if there had not been a vast number of predatory vermin in those soils the moles would never have so thoroughly traversed them. Then comes the question—Were the crops injured; or did any worse result than inconvenience arise from the moles' visitations?

The other note is from Mr. Joseph Blundell. He says:—"The only instance in which moles do good is in coppice land; their digging and general disturbance of the soil, as well as the numerous small runs made by them, serve to drain away superfluous water, the combined effect of which is decidedly beneficial to the growth of timber and underwood. Upon arable and pasture land, although they destroy worms and other insects prejudicial to the growth of farm produce in general, yet the injury done by them in undermining the crops of corn, &c., by rendering them root-true, and the impossibility of cutting crops of clover, pasture-grass, &c., on account of the hills of earth raised by them, far outweighs any advantages to be derived by allowing them to increase undisturbed. It is, therefore, the general practice, upon well-managed farms (especially where decency of appearance is cared for), to pay for killing them at so much per dozen, or at so much for the season."

CELERY CULTURE.

OUR Celery cultivators may be divided into two classes at least; the two most prominent being those who sacrifice everything to size, and who have taken their cue from the exhibition table; the other, those who, although they know full well that a certain degree of size, or succulence, is necessary to constitute it a good salad, know, also, that it ought to be tender; and that tenderness and crispness is not a necessary concomitant of size.

Although I should be amongst the very last to attempt to throw a slur on our exhibitions, which, in the main, are capable of much good; yet it becomes necessary for some friendly hand, now and then, to point to extremes in culture, which manifestly sacrifice quality to quantity. It is quite natural for our commercial friends in towns, or about their suburbs, to prefer monstrous Celery; if they purchase it in the market, they are so accustomed to esteem things according to their bulk and weight, that they are but too apt to overlook quality; and if they possess a little suburban garden desire to astonish their visiting friends; and monstrous Celery may form a legitimate topic for after-dinner chat.

Now, without despising such harmless amusement, I must claim for the old aristocracy of our land a somewhat higher order of taste. I say not this invidiously; for the least reflection will show that they are ever in a better position to appreciate quality *for its own sake*; fashion is less tyrannous with them than with the middle classes. I think it will be admitted that our higher order of gentry seldom make a fuss about prize Celery; at least, I have never found it thus; and if it be so, I have established a foundation for the recommendations I have to give, as to the best mode of combining quality, heavy crops, and individual size. These characters I place in the order of that importance I would fain assign them.

Of course, in taking this, the most convenient and profitable view of the matter, I shall not now entertain the question of exhibition Celery: this is another affair. Rotation of crops is a most important matter for consideration in all vegetable culture, and so is what is termed mixed cropping. These two questions not unfrequently stand in antagonism to each other; for mixed cropping, however convenient, however profitable, and however proper to many people on certain occasions, has this fault,—that it meddles seriously with a systematic rotation. I repudiate neither; for they are each at times expedient, according to circumstances: it merely remains for the cultivator well to determine the objects he ought to keep in view, and to shape his course accordingly. I do think it necessary thus to separate matters, in order to arrive at distinct views of business.

The kind of Celery-culture, then, that I now intend to advocate and to explain, has reference to that mode of working land which is termed a rotation system. Such is what has been termed the “bed system;” or, as I have heard it called, “the Scotch mode;” but, whether the plan originated with our northern friends, I am ignorant. The chief advantages of the bed mode, are, in my opinion—first, greater produce from a given space of probably some thirty per cent.; secondly, extra facilities afforded for protection during severe frosts; and, lastly, a furtherance of rotations.

That there is a greater produce from a given space a moment's consideration will prove. I really must, to save space, take this for granted. I think it will be found that forty per cent. more may be thus produced. As to the facilities afforded for covering late or winter Celery from frost, I may observe, that a single row will require nearly as much straw or litter as a five-foot bed, and this is a consideration; for clean straw, which is

best, is often grudged for such purposes; and, whatever market-gardeners may do, those who supply the tables of the gentry must not talk of losing their Celery by frost.

The furtherance of a rotation system will also appear plain on the slightest consideration. I have frequently seen strange mixtures of crops combined with Celery-culture by the single-row system; strange miscalculations as to time, &c.; and some years since, when I used to practice the single-row system, I also resorted to the practice of cropping between the lines, generally growing there Endive or Lettuce, which, of course, was got out betimes, for fear of impeding the cultural operations necessary for the Celery. I could, however, never thoroughly reconcile myself to the practice, and it is one which I have relinquished for eighteen years. Those gentlemen who recommend so strenuously “higgledy-piggledy cropping,” do not, I perceive, always take into consideration the difficulty of handling some of those mixtures, or the condition in which the soil will be left for future operations. Many a time have I seen crops alternately with rows of Potatoes, which were so injudiciously disposed of as to compel the cultivator either to neglect their proper culture, or in pursuing it to trample his potato-harbour in the middle of June. Such practices look very specious in the face of them, but they are seldom so profitable as at first sight they appear. Whatever very small gardeners may be compelled to resort to, as to mixture, I, for one, cannot think of giving up the rotation-cropping; although we are all, at present, ill-informed of the principles on which such should be conducted in a scientific point of view.

I can, however, as I think, see thus far, that rotation, or system-cropping, must advance with the times, to the progressive restriction of the higgledy-piggledy mode. I am prepared to admit, that a first-rate gardener, one of great experience, can combine many crops with profit, and without detracting from his general system. Thus much of mixed cropping I frequently pursue myself; but the combination must be based on the most perfect knowledge of the crops, the culture they will need, the period of doing so, and their clearance ultimately. These things, to a veteran gardener, are, as it were, of an intuitive character; but such cannot be expected from every one who can dig a plot of ground, or plant Cabbages.

As a rotation-plan, I do think this bed-system in Celery-culture ought to recommend itself to every market-gardener in the kingdom. I have before adverted to the fact, that a Celery-bed of this description proves an excellent preparative for Asparagus. I have planted by no other mode during the last ten years, and I do not think that any one can excel us, quantity and quality taken together. But this is not the only crop which the bed-system is a capital preparer for; take, for instance, Cauliflowers, Brocolis, Leeks, Rhubarb, &c., crops which cannot be rendered too succulent, and it will be found that the bed-system is highly subservient to future crops of importance. We are at this period (the middle of August) planting our main crops on ground which has carried this summer some of the finest crops imaginable of Peas of the *Woodford Green Marrow*, *Imperial*, and *Thurston's Reliance*, and as our practice may prove interesting to some of our readers I will give a slight detail of it.

The Peas clean picked, and the sticks all sorted and removed, the ground is marked-out into beds, varying from four to five feet; any precise width is not essential, but when circumstances permit, I prefer a five-foot bed, which, at our distances, holds seven plants in a cross row, the plants eight inches apart, and six inches for the two outsides. The rows crosswise are planted at two feet three inches apart, in the early part of July;

and as we plant later, we plant closer: the last planting—say in the last week of August—about twenty-one inches between the rows; the plants being put still at the same distance in the row. The line being placed to form an outside edge, an old practitioner goes along with a spade, and thrusts it full depth in a very slanting direction, the spade edge inclining much inwards, in order to produce a side which will not readily crumble. The soil is now excavated a moderate spit in depth, and lodged on spaces between the beds, which are in parallel lines. Five feet beds require about three feet spaces. A good dressing of coarse manurial matter is now spread nearly three inches in thickness, and the ground dug, turning the manure well down. On this surface we spread another coat of manure, about an inch or more in thickness; and as the latter is somewhat peculiar in character I will describe it. We use great quantities of tree-leaves as linings to frames, pits, &c., for dung is precious, and we do not possess a bottom-heat of piping in these structures. After a summer's use, and the occasional introduction of a little hot dung in the linings, this material becomes very mellow, and it is my practice to have it chopped into small particles with a sharp spade. It is thus fine enough for potting purposes without riddling, and this, spread on the surface, falls into the soil around the plant in the act of planting. So, then, it is not in quality alone, but in texture, that this material is peculiar: and it is astonishing how quickly the plants thrive in the mixture. The plants which are very strong are removed, with balls of earth, by the trowel, and when inserted are well-watered in, using guano-water, and a sprinkling of clean water after.

When the plants first begin to grow rather freely, they have one or two good soursings of liquid-manure; this hurries them on in earnest; after this they need little but earthing up, and water occasionally.

I must now describe the soiling process. The first soiling, or earthing, is done by hand in the most careful way; the operator gathers *every leaf into its place*, and holding the plant close and tight, draws the loose soil close to the plant, some three or four inches in depth, squeezing it to the stem; the soil should be rather moist, but the plant dry; the spade must instantly follow this operation, and as much soil must be levelled in between the rows as will support that squeezed to the stems. Nearly all subsequent soilings are done by the spade, a couple of light feather-edged boards being used; two men perform this best, one on each side the bed; the boards are set up with a little nicety, care being taken so to introduce and set them up as to enclose *every leaf* as upright as possible. A board being thus placed on each side, the soil is introduced, made firm, and levelled; the boards are then withdrawn, and the workmen proceed to the next row, and so on through the bed.

Now, in all this there is no difficulty whatever; less trouble than in the single-row system; and as to quality, I can only say that I rarely meet with a complaint—I had almost said, never; but the contrary. But, doubtless, hundreds grow it thus, and can, if they like, bear testimony to the value of the plan.

I will now beg to offer a few remarks on the seed-bed, for this is a most important affair. Most people raise their earliest Celery on a gentle hotbed, and very necessary it is to do so; but, for all main crops, give me out-door Celery. A bed, in a warm situation, elevated one foot above the ground level—taking care that no water can stagnate, and well sheltered from the wind—if sowed towards the middle of March, will, with proper attention, produce first-rate plants for final planting by the end of June; which I consider a capital planting time, by the bed system, for crops to come to use from the middle of September until the early part of April,

after which few care to use it as salad. My practice is this: the bed is dug deep; on its surface afterwards is spread six inches of very old manure; the best, if at hand, is the surface of last year's melon beds—if the melons have been grown in strong loam—this material, half dung, half loam, chopped as fine as if riddled, is spread and forked into the surface of the dug bed until intimately mixed; the whole is then levelled carefully, and patted tolerably firm with the spade. The seed is sown on this surface, and again lightly patted, and is then covered with finely-riddled *strong yellow loam*, about the thickness of a dollar. I have rafts, about nine feet long by four feet in width, for general protective purposes; these rafts are light, and a mat is stretched and nailed tight over them. These I use considerably every spring over such beds; and as our way of making them to work on hinges is worthy of a backwoodsman, and quite efficient, I will exhibit it. At the two north corners a stiff garden pot is placed, mouth downwards, and through the hole in the pot a short, strong stake is driven, against which the outer rail of the raft works as by a hinge. The raft is placed abutting against these two stakes; it cannot slip, and the front to the south is propped up by a stake or two capable of graduation according to season and weather.

Such are used for the Celery seed-bed; and now I may observe, that all the seed-bed requires is regular waterings when dry. As soon as the plants are getting a little strength, and are well developed, liquid-manure is supplied, and a degree of robustness ensues which is surprising.

Pricking-out is a process known to everybody; but I may point to two or three matters which demand attention. The reason I cover the seed-bed with a stiff loam is, that the young plant may have permanent moisture: those who try this plan fairly once *will never again change it*, I am persuaded. It is of much importance that the young plant, at the period of pricking-out, be as sturdy as a young oak. Indeed, in all Celery-culture, from the seed-bed upwards, no severe check or standstill should be known; it is these capricious handlings that cause the "bolting" complained of. Those who desire deliciously crisp, yet tender, Celery, without fibre, must sow late and grow it quick; it is not the age of Celery which constitutes quality, but speedy growth.

Of course, our great market-gardeners, and, perhaps, exhibition-men, pass lightly by these considerations; they are what I fancy Lord Palmerston would term men of tariffs and per centages; but it behoves those who provide for dainty and nicely-distinguishing palates, to look to quality.

As to market-gardening, if I was in the line, and had a score acres to crop with Celery, I would go boldly into the bed-system. I may observe here, that I always dust quick-lime into the *hearts* of the plants previously to the first earthing. This is applied liberally, and well introduced to every part of the plant when very dry; it will so make havoc of the little slugs, and render the Celery so distasteful to them for many weeks, as to stave off all complaints about what is commonly termed "worm-caten" Celery. This season I shall try soot also.

ROBERT ERRINGTON.

STRAWBERRY-PLANTS IN POTS.

WITHIN the last twelvemonths a new race of growers has appeared. It is such a pleasure to have even a few Strawberries three weeks or a month in advance of those in the open ground, that many, with even a very little glass, seeing how easily the thing might be done, have resolved to attempt it. The very different modes in which this can be successfully attempted seems to puzzle and perplex many of our readers. "In the mul-

itude of counsel there is safety;" but, in the commingling of a number of modes, it is often found that the experience thus obtained is that of a useful, but *severe*, schoolmaster. I will endeavour to resolve the doubts, and answer the inquiries, of many, by replies to the following questions:—

1.—"I have a greenhouse-vinery. I mean to put Strawberries in it in March, but I had no pots in summer. I laid the runners on the ground, lifted them, and planted them on a rich border, and they are now nice plants. Should I pot them now, or wait until spring?" Pot them *now*, supposing you have got no glass protection in winter, or the assistance of a slight hotbed in spring. By referring to instructions last year, you would see, that the ripening of the bud of the Strawberry-plant, and the filling the pot with roots, were next to essential to success. If your plants were on a border commanding a fair amount of sunshine, the first essential would be progressing satisfactorily, and would be expedited by the check given in lifting the plants with a ball. To secure the second, the pots should be as small as convenient, if a single plant is used. A large pot, say seven or eight inches, might have two or three plants, instead of one, each placed near the side of the pot, at equal distances from each other, and with the collar of each plant rather above than below the rim. Such plants, set full in the sun, will yet fill their pots with roots moderately before winter; and, protected from the severity of the frost, will continue to root on till required to be placed in the house.

With the assistance of a slight hotbed in spring, I have used this border-planting system for succession crops, to be taken into the house after March, allowing the plants to stand in the border all the winter. But the plan will not do for early work, as for this it is necessary to have the maturing and rooting process finished in autumn, that the plants may rest in the first months of winter. In lifting from the border, in spring, and placing in a hotbed, to cause the plants to root freely before removing them to a shelf in the house to set their fruit and ripen, three things are necessary:—1st, the bottom-heat, in which the pots are plunged, should not exceed 75°; 2nd, air should be on, night and day, the object being to have the pots filled with fresh roots before much excitement is given to the top of the plant; and, 3rd, the bottom-heat should decline, or the pot be moved out of it, some time before it is removed to a shelf, that no check whatever may be given. Under these conditions, I have often been very successful, without potting any plants, except the earliest ones, during the preceding season; but the method is to be recommended only when pots are scarce, and cannot be got at the time. Many, who at one season of the year see a large pile of pots in a gentleman's garden, could hardly believe how often these are washed, for different purposes, in one season; and the many shifts that must be resorted to to prevent a too-frequent bill for the brittle ware.

2.—"Would it not be advisable to have plants in such a south border, say one foot apart, and covered with frames in spring; and would not the fruit be as early, and certain, as under glass in a house, where no great advantage of artificial heat could be given?" Quite as certain, and rather more so; but the earliness would be dependant on the nature of the season, and the means employed. For instance; the importance of "*little matters*" would, in such a case, at once be seen. Place nice clean straw between your plants, as you do in the open air, and in a bright sun—the straw will so reflect the light and the heat along with it, that, without plenty of air, there will be a danger of your plants being scorched; while the straw will neither permit of much heat passing into the soil, nor be in itself a reservoir of heat to be given off by radiation during the coldness of

the night. But floor your border, between the plants, with slates, or tiles, or chips of stone tinged with a dark colour, and these will not only absorb heat and communicate it to the border beneath them during the day, but will radiate it at night, to prevent the enclosed atmosphere being unduly cooled then. But even with all this trouble, you will be, more than in a heated house, at the mercy of the sun. In bright weather, I have gathered three weeks or a month before fruit could be obtained in the open air. A friend of mine, who has long practised the system, is loud in its praise, and, as he says, it helps to prevent cramming his houses; and he frequently thus accelerates the natural gathering from a month to five weeks. But then, in my own experience, I have found, that in a dull spring the crop thus under glass was very little forwarder than that in a similar border in the open air. To gain the most from such a system the border should be rather steep, so that the rays of the sun may strike as little obliquely as possible.

3.—"What is the best compost?" A good hazel-coloured loam; and for tender kinds, a little road-drift, or lime-rubbish, or small charecoal added. This loam, chopped up in a roughish state, and with little or no manure incorporated, trusting for strength mainly to manure waterings, will yield great satisfaction. When composts are greatly enriched with manures, unless they are in a dry state, and perfectly free from worms, the slightest disarrangement in the drainage will cause the soil to become a sour, soapy mass, and the plant diseased and gouty. Besides, with much rotten dung it is difficult to pot them so firmly as is desirable.

4.—"What sized pot is best? In this vicinity, I see single plants in five, six, seven, and seven-and-a-half-inch pots, and two plants in seven and eight-inch pots." This entirely depends on circumstances. If I were to judge from my own experience, I would say, five-inch pots for early work, six-inch pots for the general and successional crops, and seven inches for a few very late, fine plants. This, however, it must be perceived, will greatly depend on the *time* at which good runners can be obtained. In early places, it would be as possible to mature a plant, and fill its pot with roots, in a seven-inch pot, as I could do here in a five or a six. Bear in mind, that extra luxuriance is *only* an advantage when there is *time* to mature it.

5.—"What is the reason for keeping the plant so high up in the middle of the pot? Mr. A. has large plants, looking so healthy and strong, and they are as much as from one to one-and-a-half-inch below the rim of the pot, and he grows fine fruit?" No doubt of it; and so might you, with the same care; but we wish to diminish care, and lessen the chances of failures to beginners. I recommend the collar of a Strawberry-plant to stand boldly above the soil, on a level, or slightly above the level of the pot's rim, because it thus becomes more hardened by exposure to the sun and air; because it is safer from damp, &c., in winter; and because the fruit-bud is less liable to injury from alternations of moisture and dryness in spring.

6.—"Why place the plants full in the sun shortly after being potted? Mr. B. has very strong plants, much more luxuriant than our's, but they are behind a hedge, enjoying a north-west aspect, and though his are yet so vigorous, many of the lower leaves of my plants are getting spotted, and a yellow cast?" I wish mine were. I got my runners late this season. The appearance of your plants, if they are strong, shows that you have treated them well. Ask Mr. Errington which he would prefer in October—a peach-shoot, of moderate strength, with its leaves getting yellow; or a robust shoot, tearing and growing away, with wood and leaves as green as leeks?

7.—"Though wanting the fine second-year plants at Trentham and Chatsworth, you seemed to prefer young

runners, when they could be had early enough. Now, which is really the best mode: placing the runner in the small pot, to be repotted in the fruiting pot; or fixing the runner in the fruiting pot at once?" The best gardeners would tell you it was a matter of no importance. My neighbour, Mr. Snow, used to lay the runners in the fruiting pot at once. Mr. Busby used to do the same; but has next to entirely adopted the small-pot and repotting system this season; and when so many of us could not get a runner of *British Queens* this summer, because the plants had all gone, his young plants from runners are magnificent. I have followed the repotting system myself, and for three reasons. There is less trouble in preparing the small pot for the larger, than is necessary for a permanent pot. A lighter soil may be used than would be suitable for fruiting the plant, a matter of some moment in cold late places, as encouraging roots to grow more quickly. Another, though it may be mere fancy, I imagine that this repotting gives me a ball, ultimately, more crammed, and thoroughly interlaced with roots, than when the layer is placed in the pot at once. More, however, depends on the judgment of the grower than upon the mere system followed, in this respect. When lately at Woburn Abbey, Mr. Forbes kindly showed me his Strawberry-plants, and it required no prophetic vision to see that they would bear inspection at fruiting time. They then were ready to be removed from the Strawberry quarter, the strings of the runners being cut. Each plant had been placed in the centre of its fruiting-pot. The soil was beautiful, fibry, lumpy loam, and the plant stood on a cone nearly an inch above the rim of the pot. However firmly packed, that cone would sink to the rim, and beneath it, before next spring; in fact, would become more compressible as the fibry matter decomposed. A cursory glance was sufficient to tell that the ground-work of Mr. Forbes's system was rapid growth; and then early and full maturation of the buds; and the precaution that these buds should not be injured by moisture.

8.—"Last season you mentioned that at Chatsworth, and Trentham, instead of depending on runners, they used many of the plants of the previous year a second time, after repotting them; but you also mentioned, what I have heard to be correct, the wonderful prolificacy, this season, of plants turned out of pots last summer. Cannot people, in the far north, derive both advantages, by some peculiar mode of management?" Yes. I think so. There can be no question of the prolificacy of such rising two-year-old plants, either for out-doors, or in-doors work; but the individual fruit is not often so fine, unless care is taken to thin the fruit severely. Now, a sort of medium mode of acting will give you plants that will produce rather abundantly, and fine fruit likewise. In former years I have tried it, and will merely mention how I have reverted to it again. Last season, my *Keens*, from runners, were the admired of all beholders, and they did not disappoint me; but after seeing the older plants of *Queens*, under the care of Messrs. Mackie and Fleming, I was much dissatisfied with my *Queens*; for I could not get them early enough, though they did, on trial, better than I expected. I, therefore, raised, and potted afresh, a number of plants that had been transferred to the border, after being forced in spring, and these did tolerably well, producing some very fine fruit; but in the process of lifting them, a number of small runners had to be cut off—the largest leaves scarcely averaging the size of a halfpenny—and these were carefully pricked out in a border, and were lifted and potted some seven weeks ago, and now look pretty well, as if they would do good next spring. Now, these young little things are the only *Queens* I saved out-of-doors last spring; when so young, the vital principle is stronger than when older; these plants had merely the protection of a few branches

stuck among them. Now, from my turned-out forced *British Queens*, I intend, by-and-by, to select a number of small runners, prick them on a border, and pot them the following summer; and this will entail less trouble under the circumstances than layering each plant, and be attended with more certainty. I may mention here, though I cannot tell clearly how it is, that I never can get runners, from early-forced plants, at all or anything earlier than from the plants in the open air. It is very rare, indeed, that one of my plants produces a runner in the house. Some people have them as thick as the runners of the Saxifrage, called Aaron's Beard (*sarmentosa*). I cannot say whether the mode of potting, &c., has anything to do with it; but so it is. The runners, even now, on these forced *Queens*, are very small; and the smallest of these I intend potting next summer, after being in a few days pricked-out in a border.

9.—"What sorts are best for forcing?" For large fruit, early, and plenty of them, *Keen's Seedling* is yet unrivalled. For an earlier fruit, very prolific, rather small in size, and good-flavoured, though some people cannot be made to like it, choose *Cuthill's Black Prince*. Some learned folks say it is an old thing, freshly furbished. Of this I am too ignorant to pass an opinion; but, supposing it to be old, there is no little credit due to the man who made a way for it as really deserving notice. Then for late work—though not very prolific, but splendid in the individual specimens, and next to unapproachable in flavour—there is the *British Queen*.

10.—"What are the best sorts for getting an autumn crop after forcing in spring?" You must force early, so as to gather, at farthest, by the end of March, before you can do very great things this way. From merely putting plants in a house in February and March, you can only expect to get a few at the end of August, and onwards. For this purpose, I would place *Black Prince* first, and *Keen's Seedling* second; the fine *Queens* nowhere; for, as it is a poor early forcer, it is also a poor autumn producer. During the whole of August, I have gathered, alternately, from *Eltons*, on a north border; and autumn crops of *Prince* and *Keen*. I could continue every day with *Keen*, if the weather prove bright, until it becomes too cold to ripen them; and, with all this, the crop next season will not be impaired. I might have gone on obtaining fruit from the *Prince*, but for a circumstance which I will mention, as a hint to others. I had but few plants of the *Prince* last season; but I saw, in a moment, what it could be, both for early forcing and autumn bearing; I, therefore, turned out the whole, and but few runners were made. Several friends offered me abundance; but time went on, and never showed the opportunity of sending or going for them; and here I am, on the 6th of September, destitute of them. Well, the small runners have been selected, and pricked on a border; the best, potted at once into four-and-a-half-inch pots, and the old plants taken up and potted in six-inch pots; and all the pots plunged into a slight hotbed, under a rickety frame. The plants have stood open; the crowns, therefore, will not want so much maturing; while the little heat below, and plenty of air above, will fill the pots with roots by the first week in October; after which, there will be plenty of time for resting and wintering.

11.—"What is the best plan for wintering the plants in pots?" Any mode that will keep the pots from worms, from deluging rains, and very severe frosts. I have plunged them on a bank of ashes, above the level of the ground, the tops defended with fern, straw, or branches. I have built the one upon the other, in ashes and earth, against a wall, the top of the plant looking out to the light; but the best mode, after plunging the pots, is to have a waterproof covering; and, best of all, glass sashes, which let in light, while the heat is excluded. By the middle of October the ripest should

be selected and put by themselves, on their broadsides. Before the end of the month all may receive that treatment, to save them from heavy rains; and the sooner, afterwards, they are placed in their winter quarters, the better. Generally speaking, they will want no water there from November to March; but of course, though it is advisable to have the plants *dryish*, they should not be allowed to flag. R. FISH.

THE HYACINTH.

(Continued from page 445.)

CULTURE IN POTS.—*Soil.*—This should be rich and not over light. I last year had a fine bloom potted in good, sound loam, of rather a strong texture, mixed with about one-fourth of horse-dropping gathered from the roads in my neighbourhood. I purchase this of an old, almost blind, industrious man, who, with praiseworthy industry, is up early and late collecting it. I find this dung very excellent for potting purposes for various plants, such as Geraniums, Cinerarias, Chrysanthemums, and even the finer kinds of Florists' flowers, such as Anriculas and Polyanthus. No doubt, the sand and debris of the stones used for the road are useful ingredients in the compost. If, however, this article cannot be procured, well-rotted cow-dung will be a good substitute, provided the compost has a liberal addition of sharp sand added to it.

Size of Pots.—The kind denominated "Hyacinth pots," which are at least one-third deeper than the ordinary ones, are the best for these bulbs, as, also, for the *Polyanthus Narcissus*; but they are not absolutely necessary, because the flowers are formed in the bulb the year previously. I use, when one bulb only is put in a pot, the size called large 48's, which are nearly five inches diameter at the top, and for two bulbs I use the small 32's, which are six inches in diameter. In these sizes I have had very splendid blooms. No doubt, three, or even five, bulbs might be planted in pots large enough to contain them, with a good effect, where they are to bloom in a greenhouse or a conservatory.

Last year I had some large, ornamental vases filled with the following bulbs:—In the centre, three *Polyanthus Narcissus*; next, five *Hyacinths*; then, about a dozen yellow, white, and blue *Crocuses*, and, lastly, a border of *Snowdrops*. These all flowered well, and were very much admired. They stood on the lawn, and were protected whenever there was any frost by mats. For a large conservatory these vases would have been very ornamental.

Potting.—Whatever kind of pots are used they must be well drained. I find an oyster-shell or two very useful to cover the holes at the bottom of the pots, and I think they afford a considerable amount of nutriment to the plants; over these place a thin layer of broken potsherds. Then, upon this drainage place a thin covering of very fibrous turf, broken into pieces. I have used this with great success in a green state; the decaying turf constantly gave out nourishment to the plants. Then put a layer of the compost, and press it down very firmly, only take care that it is in a proper state, neither too wet nor too dry. Keep adding more soil, and pressing it down till the pots are full enough to receive the bulbs. This pressing the soil so hard is to prevent the roots running down too quickly to the bottom of the pot, and thus, as it were, compelling them to draw the nourishment out of the soil as they descend. This is a very important point, and should be carefully attended to. When the bulb is placed in the pot upon this firm bed of soil, the top should be about a quarter-of-an-inch below the level of the pot-rim; then fill in more soil around it, pressing it also firm and close to the bulb. If this is not properly done,

when the roots begin to push they will lift the bulb out of its place, and these roots will be liable to be broken if the bulb is carelessly thrust forcibly down to its proper position. When this (the rising of the bulb) does happen, the bulb should be carefully lifted up, and a little soil taken out to make room for the roots, the bulb replaced gently, and the soil pressed again firmly around it. Some prefer leaving the very point of the bulb just out of the soil, but I prefer covering it entirely, about the eighth-of-an-inch, there is not then so much danger of the bulb being lifted out of its place when the first roots are forming. The season for potting these bulbs is the last week of September, or the first week in October, for early blooms; but they may be potted even to the end of November, if not forced too hard at first.

As soon as the whole are potted, a position must be sought to place them in till they push forth roots and begin to show the buds. A bed, four feet wide, in an open place in the garden, will be suitable. If the situation is dry, the soil may be excavated about four inches deep, and a layer of coal-ashes spread over the bottom, to keep worms out of the pots. If it is desired to preserve their names, they should be written upon labels of wood, painted with white lead, and written upon with a black-lead pencil, or, what is better, on zinc labels, with prepared ink; then place the pots containing the bulbs on the bed, and cover them over with spent tanner's bark, or coal-ashes, about two inches above the pots. Here they may remain till they are required, either for forcing into flower, or till the spring.

Take a portion of them into a warm pit, heated by some means as hot-water, dung, or tanner's bark, to bring them on into flower early, only let the forcing process be gentle, especially for the first three or four weeks, when it may be increased five or ten degrees. Begin, say with 50°, and then increase it to 55° or 60°, with sun heat.

To get them into flower at Christmas they should be placed in heat about the middle of October, so that the forcing may be gradual. If forced too quickly, or with too much power, the flower-stems will be weak, and the colours will be anything but bright. Whereas, if they are brought on gradually, the flower-stems will be strong, the flowers large, and the colour better. Here I may remark, that some sorts of *Hyacinths* are better adapted for either growing in glasses or forcing in pots. In most catalogues, such varieties are marked with an asterisk (thus *), and such should be ordered for this purpose, though for growing in pots, to flower late in the spring, almost any variety will answer.

When the bloom is in full perfection the pots should be taken into a cool greenhouse, or window, and plenty of air given. By that means they will last much longer in bloom than if kept in heat. After the blooming is over the pots may be placed behind a wall, and duly watered to perfect the bulbs. They will not answer again for forcing, but may be planted in the borders the October following.

T. APPLEBY.

(To be continued.)

JOTTINGS BY THE WAY.

(Continued from page 445.)

HEATON PARK, near Manchester, the seat of the Earl Wilton.—In this place, though near to the great cotton-manufacturing town of Manchester, I found a well-managed garden. The mansion is placed in a beautiful, well-wooded, and considerably undulated park of large extent. The views from the terrace-walk, in front, are extensive and beautiful; and the woods in the distance nearly conceal the disagreeable, long, smoky chimneys.

There is a lofty conservatory near to the mansion, in which I noted some well-grown and profusely-bloomed

Fuchsias, in the pyramidal form. Many of them were fully twelve feet high, with branches down to the edge of the pots, and each branch well-bloomed. This is, I am quite sure, the best and most elegant form of training this summer-flowering greenhouse plant. Our greenhouse would be sadly deficient in bloom in the months of July and August if the *Fuchsias* were absent.

In a recess, at one end of the conservatory, I noted several pots of the winter-flowering *Tree Carnation*; many of them were dense plants, four feet high, and nearly three feet through, well furnished with buds; they were growing in 12-inch pots, and had been stopped constantly, to induce the bushy growth they had made. My friend, Mr. Fish, has lately written excellent directions how to grow these useful plants; and the examples I saw here prove that fine plants may be grown if his directions are followed. I noted, in the borders, a new, self-coloured *Carnation*, which, I understood, Lady Wilton had brought from the continent. I believe some of it was grown in pots, and prevented from flowering by nipping off the early buds. Its colour is a singular kind of orange-buff.

The *Orange Trees* here are grown in large boxes, and are set out-of-doors every summer. The consequence is a fine autumnal bloom as soon as they are taken in. The summer's exposure appears to give them a rest, and by that means induces plenty of flowers. I observed abundance of buds forming. This may not be new, but it is a practice seldom followed. There seems to be a fear of placing the *Orange-tree* in the open air, but I think, and am pretty certain, from the example I saw here, that with the proper precaution of not placing them in the hot, blazing sun, they may be safely set out-of-doors. I remember seeing some extraordinary fine specimens of this tribe exposed, in a similar manner, at Cliveden, a seat of the Duke of Sutherland, near Maidenhead, not only without any ill effects, but, on the contrary, with manifest advantage.

Though Heaton Park is situated so near to the smoke of the manufactories, yet I found here a good collection of *Heaths* well-grown, and several in flower. As many of our readers may wish to know what *Heaths* flower at this time of the year, I noted the following:—*Erica Bowieana*, *E. Irbyana*, *E. Juliana*, *E. Savileana*, *E. rubens*, *E. umbellata*, and *E. intermedia*.

In the pleasure-grounds, I was particularly struck with the great number of healthy *Rhododendrons*. They form the underwood of a large plantation, on a rising ground, a walk through which leads to the kitchen gardens. Mr. Shuter, the gardener, informed me that he plants them in a very small portion of a compost of peat and leaf-mould to each, and they thrive well without my further trouble.

There is here a good range of hothouses devoted to the culture of the Pine Apple, the Vine, and Peaches, and Nectarines. The Grapes were excellent; the *Black Hamburgs* were as black as could be desired, and the *Muscats* were equally well coloured. The *Pines* are grown in the old fashion, in pots, and fruited in them, and the fruit was as good as need be; showing, that whatever method is adopted, if careful, judicious management attends it, success will follow.

The *Peaches* and *Nectarines* in the houses had borne their crop of fruit, and were in a state of rest. On the walls, the *Peaches* do not thrive here, on account of the moist climate, and, very probably, the smoky atmosphere, also. It is intended to place glass against them in order to protect the trees, and so insure a crop of fruit. The idea that a covering of glass is necessary for the certain production of these luscious fruits is becoming very general. In my progress through the gardens in the north, I find this practice adopting frequently. Peach-houses are common enough, but they are for the purpose of forcing the fruit early; but these glass-covered walls

are put up merely to protect the blossoms in early spring, and to ripen the wood more perfectly in autumn, without any expence of fuel; the intention being merely to secure a certain crop of fruit in the usual season. I may mention, that this plan has been adopted at Trentham, the Duke of Sutherland's; at Welbeck, the Duke of Portland's; at Kimmel Park, the late Lord Dinorben's, in North Wales; and at Thornyeroft Hall, in Cheshire; and no doubt in many other places that I have not seen. At all these places the success has amply reimbursed the expence. I am aware, the same effect has been sought for by having the walls flued, the great objection to which is the number of necessary smoky chimneys, making the gardens, on a fine spring evening, more like a manufactory of some kind or other than a pleasant abode of Flora and Pomona; and even with this nuisance, ineffectual for the purpose, without protection of some kind, in the shape of curtains of canvass, or branches of evergreens. Now that glass is cheap the walls may be covered with it, and all these disagreeables, in the shape of smoke, littery covering of branches, or expensive protection of canvass, done away with; and, what is better, a certain crop of fruit insured.

I think that sooner or later every Peach wall, in at least the more northern parts of the kingdom, will be covered with glass, or, if not, the culture of these fruits will be dispensed with, and the finer varieties of the Flemish Pears planted instead. No doubt, in some places good Peaches and Nectarines are produced occasionally on south walls; but the success is always precarious in our uncertain climate, and no one but a gardener can believe the anxiety and trouble this crop always gives the cultivator, even in the most favoured localities. Cover his wall with glass, and all this care will be done away with. There is another advantage in such a structure, and that is the destruction of the green fly, which always attacks the trees in spring. The universal remedy of tobacco-smoke can be applied with unfailing success; and, also, the fruit can be protected from the destructive ravages of the wasp and the large bottle fly, by covering the air opening with canvass to prevent their ingress.

T. APPLEBY.

(To be continued.)

A FEW WORDS ON TOMATOES.

THIS member of a very suspicious family has been long established in our gardens, and, like many other productions of a minor kind, is regarded as a great delicacy by some, while others dislike it. Without enquiring the reasons for the latter conclusion, we believe there are few but are offended at the smell given off by the foliage and plant in general. This, perhaps, has some influence in determining the condemnation of the fruit, which is a widely different thing.

The young plants, reared in hotbeds, or otherwise, should be brought forward so as to occupy six or seven-inch pots by the middle of May, when it is time to plant them out; at the same time, it is better if they have been stunted a little, or, rather, pot-bound, so as to induce their shewing flower; if so, they are so much the better; for although a speedy and luxuriant growth usually does take place immediately after, yet, the advance made is not lost, and they keep going on apace, in the way of making rampant shoots, until checked by the fruiting process, and that judicious pruning, &c., we have so often recommended. Now, this is not exactly sufficient; all this may be done, and yet no ripe fruit by the middle of September, at which time it ought to be in, consequently some other means must be adopted.

The most common positions given to this plant, in most private gardens, are in these vacancies which occur in most fruit-walls where the trees do not cover

them. On these places, and with an east, west, or south aspect, it is planted and trained with a fair prospect of success; perhaps, the only fault, in many instances, being the too lavish expenditure of rich materials in the planting, and the too sparing use of the knife in the pruning. This we herewith beg to call particular attention to, because we conceive it to be the error against which most cultivators stumble; not, perhaps, with a just knowledge of the cause which governs their doing so, yet, nevertheless, such is the case.

It would be idle to affirm, that cutting off large portions from a luxuriant annual plant, like the Tomato, did not, in some measure, injure it, in so far as its health and constitutional energy are concerned. This, however, is true no further than the elongation of the vine and production of foliage is concerned; and, as nature has intended it to furnish the means of reproducing itself, it follows, that means taken to give unwonted vigour to the plant must be at variance with the general purpose of fruitfulness, by diverting the channels which ought to support the one, into the wildness which the other gives rise to; this, naturally, points out that some "check" must be given. One mode is by curtailing the top, as above; and the other, is doing the same to the root: with these two agents at work, and the use of what other advantages the place possesses, this fruit is often ripened in a way that gives little to wish for. Observe, in the pruning or curtailing of the roots, care must be taken to do that simultaneously with the top. In general, a spade thrust down, so as to cut through all the roots that ramify more than a foot from the collar of the plant is often deemed sufficient; but it would not be bad practice to plant them on ground less rich than the usual class of wall-borders are in England; supposing that stones, brickbats, sand, and other rubbish, were substituted for dung, and other enriching matters, and the above surrounded by an impenetrable clay-band, to keep the roots, which, I have no doubt, would relish the stones, &c., from going further from home in search of more unctuous food; whichever way it was, certainly there would be less tendency to produce rank, useless wood, than is now the case in such deep garden soils; and the best fruit that we have ever seen has been in gardens where the soil approaches somewhat to that described, as a less rampant growth would assuredly become more prolific, as far as fruit is concerned; and there is little reason to fear that the plant would suffer from lack of moisture.

As, however, it is too late to prepare stations for plants of the present year, let those which do exist have all the loose and useless shoots cut away, and, if needs be, a part of the smaller fruit thinned off likewise, and the larger ones fully exposed to the sun; and, to check that undue supply of the good things with which the border is composed of, let a spade be thrust in all around the plant, severing its roots to the compass of a good large pot. This will check the production of laterals and spray; and it is likely the sunshine, which we may yet have, will suffice to give that rich colour, without which this fruit is not much regarded. The flavour which a bright sun can only give must not be looked for; but, in a season like the present one, wherein we have here, in a manner, removed some four or five degrees northward, we must adopt the means made use of there to perfect tender produce, and be content with its meagreness as well; at the same time, when facilities do exist of giving some protection to the plant in cold nights, let that be at once done; warding off heavy dews will be also beneficial; but to be continually under glass is seldom so good as out-doors, the propensity of the plant being then the production of vine, rather than fruit; hence the evil; but in autumn, glasslights are very beneficial, for it is then that we derive the warmth and shelter after the growing season is in a measure gone.

Although Tomatoes are grown on trellises, and sometimes tied to single stakes, like Raspberries, &c., and often ripen in tolerable perfection in such places, yet they are generally favoured with other circumstances which the private grower cannot command.

J. ROBSON.

CULTIVATION OF RYE.

RYE is an inferior kind of grain, and much grown in many of the Continental states, as a staple produce, upon certain districts of poor land, where it forms the chief crop of corn cultivated for sale.

It also enters largely into consumption as a food of the poorer sort of people in Russia, and other parts of the Continent; being converted, either wholly or partly, into a very coarse kind of bread; but it is very dark in colour, and unpalatable, being also very deficient in nutrition, as compared with wheaten bread.

In this country it is grown chiefly for feeding sheep in early spring, or for the soiling of cattle; the grain is, however, often used for mealing purposes, being ground with Barley, in the proportion of two parts Barley and one part Rye; this mixture is used only when the relative price of the grain renders it advisable. The poorer soils of England, and those only which are too barren, or too much out of condition to produce the better kinds of grain, are usually cropped with this grain for the purpose of sale; yet, in some instances, land capable of yielding a good return of other grain is sown with Rye, by reason of its coming so early to the harvest that a heavy crop may be taken from the land, and the stubble ploughed down, and succeeded by a crop of Turnips, for which purpose it answers well; the Rye crop being removed from the land from ten days to a fortnight earlier than the Wheat crop, gives good time and opportunity for the obtaining a full crop of White Turnips.

Upon the best soils it is more usual to grow Rye for early feeding of sheep, to be followed by a crop of Swedish Turnips, and the land is certainly remarkably kind for that crop after Rye has been fed by sheep. This plan should, however, be only adopted upon land dry, clean, and free from couch grass, in order that the Turnips may be sown after *one* ploughing.

When Rye is cut for soiling cattle and horses, for which purpose it comes very early, and before other green crops, the writer has found it answer to sow about as much as may be required to feed the cattle for a period of ten days previous to the Trifolium being ready to cut for the same purpose.

To insure a succession of these green crops, it is best to select a field intended for Turnips the next season, and to sow a part with Rye, part with Trifolium, and part with Tares, and about as much as will furnish a supply of each kind of food in their season, having regard to the quantity of stock to be fed.

A few years since, the *St. John's Day Rye*, so called because the proper period of sowing was about that day, was much written up; but, although the produce is somewhat earlier, and much more valuable as green

food than the ordinary sorts, yet the long period it occupies the ground (eleven months), proved fatal to its general introduction. It is, therefore, now seldom met with.

No kind of grain requires so little preparation of the soil, and so little manure to be applied, as the Rye crop, and at the same time it must be admitted, that no kind of corn yields so small a return in money-value.

It is generally sown after a crop of Wheat when grown for feeding purposes, yet it is not important as to the previous crop. The sooner it is sown after harvest, the better, particularly if required for feeding purposes; the quantity of seed required for an acre to produce feed, is from three to four bushels; if the crop is intended for seed and sale, from two to three bushels will prove sufficient; and when intended for the latter purpose, the time of sowing may be delayed with advantage for about three weeks.

In preparing the land for this crop, no more ploughing than is necessary to render the land clean will be required; yet the land should be lighter and more pulverised than is necessary in cultivating for Wheat; in fact, it should be more like cultivating for Barley; it is, however, not practicable, in ordinary seasons, to obtain a highly-pulverised surface in the autumnal period of the year.

The tillage described as necessary is best attained by the scarifier, harrow, and roller—more than one ploughing not being generally required.

The crop does best when the seed is drilled, if intended to produce grain for sale, as it may be hoed at the proper period, and the land kept clean; at the same time, the sample will be more free from the seeds of the weeds, which will enhance the value of the grain, the extra value depending, in a great measure, upon its fitness for seeding purposes.

It is, however, better to sow broadcast when the crop is required for early feeding or cutting, as it can thus be more equally distributed over the land, and it is rendered thicker whilst young, and in the feeding leaf, than it can be when drilled.

If manure is required, two ewt. of Peruvian Guano per acre is a suitable application, and should be harrowed in with the seed, if the crop is intended for spring feeding; but in case it is left to produce grain, the same quantity of manure should be applied as a top-dressing, and harrowed in during the months of February or March.

In the selection of Rye for seed, it is particularly desirable that it should be clean, and free from the seeds of weeds; for whether the crop is intended for seed or feeding, it is alike injured by the presence of weeds.

A rather dry and warm climate is most suitable for this crop; it is, therefore, not much grown in cold, backward, and exposed situations; because, if cultivated for the grain, it would produce less value than the Oat crop, and if grown for feeding purposes, it would come too late, as the chief value of the crop depends upon its adaptation for early feeding.

JOSEPH BLUNDELL.

PHILLIPS' FIRE ANNIHILATOR.

To farmers and others whose dwellings are far from a town, this invention, if effectual, is of more value than to those even who reside nearer to the aid afforded by a fire-engine. To all, however, it is most important, because the most powerful fire-engine has little influence over a conflagration established, as it usually is, before that engine can be brought into operation, whereas, the "Fire Annihilator" being always at hand can be employed the instant the fire is discovered. This is no imaginary case, for we have it upon the authority of a near relative of Mr. Masterman, the well-known banker, that a short time since a fire broke out in one of the Yorkshire Woollen Mills, threatening destruction to a large mass of property of very combustible nature, and the mill was three miles from the nearest fire-engine. The proprietors had two fire annihilators on the premises, and one of them being brought into operation, the fire was speedily extinguished, and thus a large amount of property saved.

Then, again, we read the following report of some recent experiments tried at Gravesend:—

"With a view of affording the fullest opportunity to the public of witnessing the merits of Phillips's Fire Annihilator, or vapour engine, in suppressing fire, the directors of the company gave a 'demonstration' last night, in the Terrace Gardens, which attracted one of the largest gatherings ever seen, perhaps, in the neighbourhood of the town. The pier and grounds were literally crowded, while the river in front was studded with craft of all descriptions, loaded with people. The police took possession of the approaches to the grounds, and, under the direction of Mr. Superintendent White, of the town force, did much service in preventing accidents. In order that the real value of the invention to a ship on fire might be correctly appreciated by those who have the supervision of emigrant ships on the part of government, and whose duty it is to see that every precaution is taken against the possibility of conflagration, T. W. C. Murdoch, Esq., the Chairman of her Majesty's Emigration Commissioners; Sir Frederick Rogers, another of the commission; Mr. Walcot, the secretary; Captain Lean, R.N., the inspecting officer for the port of London; and Dr. Sparks, the medical officer of the board, attended to witness the trials. A number of eminent shipowners were also attracted to view the result of the experiments. Amongst them we noticed Mr. Duncan Dunbar, Mr. Anthony Ridley, the deputy chairman of the Local Marine Board, London; Captains Drew and Hall, of the same body; Mr. John Chapman, and Mr. John Smith, Capt. Gilmore, Capt. Temperley, Mr. Moxon, Mr. Ferguson, Mr. Wheeler, Capt. Rowland, the harbour-master of the port of London, M. Glaisher, of the Royal Observatory, Greenwich, — Barnard, Esq., agent for the Crown Colonies, the Mayor of Gravesend, and most of the corporation and leading inhabitants of the place; the company altogether forming a jury of no trifling importance to determine the efficacy and worth of the annihilator.

"The demonstration commenced shortly before nine, in a way that must have satisfied the most doubtful as to the extraordinary influence of the vapour emitted by the machines. Along the promenade of the gardens, facing the Thames, was laid a tank, fifty feet long by five feet wide. This contained 250 gallons of tar, over the surface of which was distributed a quantity of shavings, which, being well saturated in the inflammable liquid, rendered their ignition most fierce and rapid. Being lighted, the flames quickly extended along the whole length of fifty feet of the tank, presenting a body of fire rarely seen at any of the conflagrations which occur in the metropolis. While the multitude were wondering as to the way this mass of flame was to be extinguished, two men, each bearing a machine, appeared at the windward end of the blazing tank, and having directed the vapour upon the flames, they followed them up the extent of the tank, and, within half a minute from the time of the annihilator being first employed, the entire body of fire, as if by magic, was extinguished, not a spark being observable. Tremendous cheers from all parts of the gardens followed the close of this successful and highly-interesting experiment. It was then suggested to have an 'amateur' trial by the police, so as to show how the machine might be

used by that body, or by strangers. Another layer of shavings was thrown over the tar tank, and, being lighted, two officers in the Gravesend force, aided by Mr. White, the superintendent, faced the devouring element, and, throwing in the vapour, subdued the conflagration almost as promptly as in the first trial. This also elicited much applause, the utter extinction of the smallest particle of burning ember exciting general surprise and admiration.

"The next experiment was upon the hold of a ship, a trial which attracted the special observation of the emigration commissioners and the many shipowners present. The hulk of an old vessel, named the *Wear*, was moored alongside the garden wall or quay, and in the forehold, measuring some 20 feet long, 17 feet wide, and 9 feet 6 high, were stowed 12 sugar hogsheads, 36 resin and turpentine barrels, 24 saltpetre bags, 36 sacks of shavings, $\frac{1}{4}$ cwt of resin, and 3 gallons of turpentine—as highly inflammable a character of cargo as perhaps was ever heard of being stowed in so limited a space. It was said that the directors were desirous of putting a strong and extreme case before the commissioners, in order to exhibit the full power of the invention, an anxiety which we fancy was fully answered; for, in truth, with such a cargo, a vessel would be really a "fire-ship." Previous to the contents of the hold being ignited, the commissioners, with Captain Lean, and several other gentlemen, went on board, and devoted some ten minutes view about the bulk. With the exception of two or three annihilators, which stood upon the deck, no arrangement was observable for subduing the approaching conflagration. The signal being given, the hold was fired, and in a few minutes a body of flame shot up through the hatchway which must have been seen for miles round. The entire mass of inflammable materials having been allowed to get firmly alight, the machines were applied, and, after about half a minute's streaming of the vaporous cloud, the fire, which threatened the immediate destruction of the vessel, was subdued. A quantity of smoke kept rising for some few minutes afterwards, but that was quickly suppressed, and the hulk soon assumed its former safe appearance, indicating but little of having been the scene of so fierce a conflagration a few minutes previously. The result of this test formed the subject of a very interesting discussion amongst the nautical and scientific gentlemen present. It is already known that her Majesty's commissioners have already approved of the annihilators for use in passenger ships, whenever the owners can be induced to put them on board instead of fire-engines; and doubtless this satisfactory and confirmatory proof of their great value, as a protection against the ravages of fire, will tend much to their being more generally kept on board vessels, foreign or coasters.

"The machines were next brought to bear upon a wooden house, erected upon the promenade, the frontage looking to the pier. It was 25 feet high, contained 70 spruce deal boards, and a cart-load of shavings and reeds, with six gallons of tar and turpentine, and 28 lb. of resin. The exterior had the appearance of an ordinary private dwelling, but we question whether any goods and chattels could ever burn like the combustible stuff which was stowed in this doomed house. A fire was kindled on the basement floor, and, as may be imagined, quickly extended to the roof. Huge volumes of flames shot from every window and aperture in the building, presenting the appearance of an uncontrollable conflagration, and illuminating the river and district for many miles. The whole being literally one body of fire, the annihilators were brought forward, and the acid gas and steam which they emitted being directed into the flaming pile, in less than a minute the fire was extinguished, a feat that drew forth the most enthusiastic plaudits.

"This closed the demonstration as far as regards the annihilator, the great value and efficacy of which was fully borne out by the severe tests to which it was applied, and which excited the satisfaction of all present. A very beautiful display of Robson's rockets and signal lights then took place, some of the former reaching a very great altitude. The more *élite* portion of the visitors then withdrew to the Clarendon Hotel, and afterwards returned to town by a special train, which left at eleven o'clock. We should not forget to mention that the general arrangement of the demonstration was under the direction of Mr. Curtis, the secretary of the

company, whose courtesy in affording us the fullest information we have to acknowledge."

Now, we should not have thought ourselves justified in publishing this report, if we had not had the additional testimony of some gentleman who was present, and on whom we can place full reliance. Such a witness is Mr. Moxon, sen., and he writes to us as follows:—

"Having witnessed the experiments myself with this machine, I think it due to the cause of humanity to send you the above brief account of the proceedings, taken from a daily paper. At the dinner, there were many of the very largest ship-owners of this port; who, after witnessing the experiments, were requested by the Chairman to state frankly and freely if they had any doubts as to its practical utility, while all parties were face to face. So far from there being a dissentient voice, *all* agreed that they were entirely satisfied of its utility and practicability. Such being the case, I hope you will give currency to an invention of such moment to us all.—The *Amazon*, with two of the small-sized machines, would have been safe; cost to the shipowner, 30s."

THE RICH WIDOW.

By the Authoress of "My Flowers."

IN one of my last papers I gave a sketch of one who was "seeking rest and finding none." It was an instructive lesson, and I hope very many of my readers are laying it closely to heart. I will now give a slighter glance at the declining days of poor Robert's widow, who still lives, but whose *rest* is little better than his own. It is said by an old proverb, that "two of a trade seldom agree." However, the trade of Roberts and his wife was the same, and they agreed admirably; they loved the world, money, and gain; they strove for it in the same way, and used it in the same way, too. Indeed, unless people of *this* particular trade do get together, it is certain death to the open hearted one; the "liberal soul" would pine and sink under the horror of perpetual money-scraping. It is a feeling most difficult to change; a spendthrift *may* be taught prudence in time, but a lover of gain can scarcely ever be made liberal; and so, in the face of the old proverb, Roberts and his wife went on very comfortably together.

After her husband's death, Mrs. Roberts retired from the shop, and settled herself in a very nice cottage in the same village. The front of the house was all covered over with monthly roses, jasmine, and other creepers, and there was a good garden at the back. She was rich; her scraping husband had provided handsomely for her, and she had nothing to do but enjoy it. There she sat, in handsome mourning, without children to provide for or be anxious about, and nothing to disturb her; but she was grasping still. She possessed several cottages, which she let at high rents, far beyond their merits, and gained the name of a very hard landlady. I know there is much to be said for owners of cottages; there is a great deal of quiet, respectable dishonesty among the poor, if my readers can understand my meaning. There is a great backwardness as to rent among those who have very good characters; and great dispositions to defraud the landlord of his right, in many who profess to abhor debt, and to walk honestly before men. This I know from observation and experience; but still, among landlords, there is a hard way, and a soft way, of doing things; and Mrs. Roberts went the hard way to work. She gained a hard name; and there was no one prepared to come forward and explain matters so as to clear her from the charge.

She was an afflicted woman in her health. She suffered constantly from soreness in the legs; and for months she would be confined to the house in this way, so that her money, though it enabled her to procure comforts, could not deliver her in the day of trouble; and when people are niggardly, they will deny themselves what they want, rather than part with the idol they worship. When she was well she was clothed in gay attire, and looked smart and comely; but this deep-seated disease, like the leprosy of sin, rankled within, and broke out continually. A farmer in the neighbourhood, a money-lover like herself, wished to make her his wife, but she dreaded giving up her idol into any one

else's power, and she loitered so much on the road to a second marriage, that her suitor faded and died, and she remains still a widow. I have already sketched the melancholy tale of J. B., whose hoarded stacks were devoured with mice and rats. He was the man.

Some months ago, Mrs. Roberts became seriously ill, so much so that she kept her bed. An inward fever devoured her; she was racked with pain, exhausted with weakness, and her life was despaired of. In this condition, it was natural to suppose her poor worldly mind would be aroused to call upon God; when perishing things were passing away, she might be anxious to possess riches which could not be snatched from her. But no; she could not be aroused to feel the state of her soul; she could not see its darkness, or its disease; she was satisfied that all was well. She was very desirous to recover, very dissatisfied with the doctor, and not pleased with what she thought neglect on the part of some other persons; but she had no higher considerations than these on her sick bed; and some kind neighbours, who waited upon her, were pained and grieved to find all their efforts to awaken her to spiritual things were utterly vain.

Nothing marks more clearly the character of a person than the way they are spoken of in sickness and death. A man may pass without much notice while he is alive and well, but let him lie down in a sick-bed, and you find out his worth in public estimation directly. The sorrow, or the indifference of his neighbours, lets you into his real character at once; and nothing is more sad than to hear of sickness without a blessing breathed over it.

No one lamented the probable loss of poor Mrs. Roberts. Many were sorry for *her*, but no one was sorry for themselves or others. There were no widows to make lamentations, or to "show the coats and garments" she had made. There was, really, only one individual who spoke of her kindly. It is not necessary that a person should do more than their means warrant; it is not necessary that alms should be given, and gifts multiplied, to buy an honoured name; because, nine times out of ten, such things cannot be done, even by those whose hearts are full of love to men. But when a person is really kind and benevolent, a thousand kindnesses and benevolences will flow daily around them, and make them pleasant to their fellow-creatures, so that their loss will be felt and lamented by all. Poor Mrs. Roberts! her good things had not been scattered around; her heart had not been enlarged towards her poorer brethren; and she had even requited the attentions of her superiors very unhandsomely.

It has pleased the Lord of mercy to raise her again from her sick bed! The day of grace has not yet closed upon her; she has time afforded her, and those who have most kindly waited upon her, without fee or reward, are well fitted to set before her "the things that belong unto her peace," if she will but hear them. She is able again to creep out into the world, but the very people she has lived among did not know her again when they first saw her; her face was that of a stranger to them, so greatly is she changed.

Readers! can this be called rest, or peace? It is a proof of the long-suffering of the Lord, but it is not *happiness*. Oh! that the raising up of the body may lead to the raising up of the soul, and then her "peace will be as a river." Money can give no comfort, nor, indeed, can all the works of the law give pardon and peace, if we laboured ever so hard to do them. There is *but one* work which can give us peace, and rest, and save our souls alive. May it please the God of all grace to enable *us*, readers, as well as *her*, to do it. What is this one work? The Word of the Lord shall tell us.

"Jesus answered and said unto them, This is the work of God, that ye believe on Him whom He hath sent."

SEA WEEDS.—No. 9.

SUB-CLASS 2.

RHODOSPERMEÆ OR CERAMIALES.

(Continued from page 408.)

THE exquisitely beautiful plants contained in this second great division of the Marine Algae are very numerous and form a large proportion of the whole. They vary in colour,

from the finest rose, or even scarlet, to purple and reddish-brown; and it is a curious fact, that the finest colours are developed in deep pools, or where the plants are shaded by the large *Melanosperms*. A labouring man, who is much interested in all branches of Natural History, and is now devoting some of his leisure hours to the study of sea plants, gives me an interesting account of his having discovered the beautiful rosy *Delesseria sanguinea* growing on rocks covered by about five or six fathoms of water when the tide is full. He can only visit these rocks at very low ebb tides, and even then he has to wade in water about three feet deep. He describes the rocks as covered by a crust of sand resembling a honey-comb, and filled with a kind of worm, with many feet or suckers. He says, that the *Delesseria* looks beautiful when waving to and fro in the water, contrasted with the dark green and olive weeds. The shell-fish moving about in all directions, so numerous as to remind him of the people in a large town, all seeming to have a portion of work to do, and all in the greatest hurry imaginable. Then it struck this energetic naturalist that it was a strange thing how many men had lived all their lives in the neighbourhood of these wonders of the creation without once looking aside to notice them; and he thanked God for giving him a desire to investigate the works of His hands.

He speaks of another of the red weeds, whose habitation is also in deep water, growing on very soft sand, or rather mud—this is *Griffithsia setacea*; and it must be in great profusion, for he says, that when covered by the sea the bank looked like blood! It is of a full, rich red, and has some remarkable properties, which I shall mention when I describe it. I now proceed to

ORDER 7.—RHODOMELACEÆ.

"Red or brown sea-weeds, with a leafy or filiform areolated or filiform frond, composed of polygonal cells."—*Harvey*.

ODONTHALIA.—*Lyngb.*

From two words signifying a tooth and a branch.



1. ODONTHALIA DENTATA (Toothed).—Root a hard disk, with irregularly branching winged fronds of a deep red, becoming almost black as the plant advances in age, but forming very beautiful specimens when young, and adhering well to paper, which it does not do late in the season.

"Frond branching, spreading, the branches distichous, alternately pinnatifid, pinnulæ toothed at their apex; capsules ovate, pedunculate, paniced, in axillary clusters."—*Grev.* I believe this may be considered as a northern weed. I have beautiful specimens from Arran and Salcoats.

2. RHODOMELA.—*Ag.*

From two words signifying red and black.

1. RHODOMELA LYCOPODIODES (Lycopodium-like).—"Frond cylindrical, elongated, mostly simple, densely clothed with finely divided bushy ramuli, intermixed with the setaceous remains of a former series at their base."—*Greville*.

This plant is common in Scotland and the north of England and Ireland; it is from four to eighteen inches long.

2. *RHODOMELA SUEFUSCA* (Slightly-brown).—"Frond cylindrical, very much branched; branches alternate."

Frequent; four to ten inches high; colour red-brown, becoming almost black when dried, and in winter becoming so coarse and shaggy that it could only be recognised by those who are acquainted with it.

BOSTRYCHIA.—Mout.

1. *BOSTRYCHIA SCORPIOIDES* (Scorpion-like).—"Frond cylindrical, slender, attenuated, three or four times pinnated with horizontal branches, the uppermost involute at the extremity."—*Harvey*. This curious little plant of which I have specimens from the south of England, grows both on rocks in the sea, and in salt-water ditches, in tufts somewhat entangled. It is of a purple colour, black when dry; the name is from a word which signifies a ringlet or curl of hair, which this fantastic little plant somewhat resembles.

4. RYTIPHLÆA.—Ag.

"Frond thread-shaped, pinnate, transversely striate, reticulated; the axis articulated, composed of a circle of large, tubular, elongated cells (siphous) surrounding a central cell. Name from two words signifying a wrinkle and bark, because the surface is transversely wrinkled when dry."—*Harvey*.

1. *RYTIPHLÆA PINASTROIDES*.—On rocks near low water, frequent on the south coast of England; four to eight inches high; cartilaginous and of a dull red colour, which changes to black in drying.

2. *R. COMPLANATA*.—Very rare; on rocky beds of shallow tide-pools; colour a dark brown-red.

3. *R. THUYOIDES*.—Frequent in tide-pools; three to four inches high; much branched; colour brown or brownish-yellow.

4. *R. FRUTICULOSA*.—On rocks covered with sand, common, substance cartilaginous; colour dull reddish-brown.

5. POLYSIPHONIA.—Grev.

"Frond filamentous, partially or generally articulate; joints longitudinally striate, composed of numerous radiating cells (siphous) disposed round a central cavity. Fructification two-fold on distinct plants; 1, ceramidia containing a tuft of pear-shaped spores; 2, tetraspores imbedded in swollen branchlets; name from *polos*, many, and *siphon*, a tube. A vast genus, of which nearly 300 species, from all parts of the world, have been described; many probably more than once under different names."—*Harvey*.

SUB-GENUS 1.—OLIGOSIPHONIA.

Primary tubes; four, rarely five.

POLYSIPHONIA.

1. *P. URCEOLATA*.—An elegant little plant, growing on rocks, and often on *Laminaria digitata*, and other algæ; from three to nine inches high, the stem at the base the thickness of horse-hair; dark red, and in large bunches; rigid.

2. *P. FORMOSA*.—Very slender and soft, much divided and resembling *P. urceolata* in some respects, but more slender; from six to ten inches high. Not uncommon, but extremely beautiful.

3. *P. STRICTA*.—Much tufted and bristly.

4. *P. PULVINATA*.—Growing on rocks and algæ, not uncommon, in thick tufts, about an inch high; colour red or purplish.

5. *P. FIBRATA*.—On rocks and other algæ. I found it growing abundantly in small rock pools at Bamborough, forming a delicate and beautiful fringe round their margin; stem two to ten inches long, of a dark brown; tender, and soon decomposing in fresh water.

6. *P. SPINULOSA*.—"Dark red; branches divaricate, somewhat rigid; the ramuli short, straight, subulate; articulations about equal in length and breadth, three-tubed."—*Grev*. Extremely rare; found at Appin by Captain Carmichael, who only discovered one specimen.

7. *P. RICHARDSONI*.—"At Colvend, Dumfries, by Sir John Richardson. Of this species nothing is known beyond a single specimen preserved in the Hookerian Herbarium, and figured in 'Phycologia Britanica.'"—*Harvey*.

8. *P. GRIFFITHSIANA*.—Very rare. "Parasitical on *Polyides rotundus*, at Torquay."—*Mrs. Griffiths*.

9. *P. ELONGELLA*.—Growing on rocks between tide marks; rather rare; stems two to four inches high; the ramuli sometimes thickly tufted, and of a beautiful rose-red. Isle of Man, Ayrshire coast, and, indeed, *Harvey* says, generally distributed round the British shores.

10. *P. ELONGATA*.—Stems six to twelve inches high, as thick as whipcord, robust and cartilaginous; on stones and shells; the ramuli form tufts of crimson at the tips of the branches.

11. *P. GREVILLEI*.—Found by Dr. Greville on the shores of Bute, on the larger algæ.

12. *P. VIOLACEA*.—Brown, red, or purple; bushy, six to eight inches high.

13. *P. CARMICHAELICUM*.—"Filaments tufted; rigid; branched from the base; found parasitical on *Desmarestia aculeata*, at Appin, by Captain Carmichael."—*Harvey*.

14. *P. FIBRILLOSA*.—"Pale straw-colour; six to ten inches long; stem thicker than a bristle; a tender and fragile plant." S. B.

(To be continued.)

DISEASES OF POULTRY.

LEG WEAKNESS.

THE symptoms of this disease require, unfortunately, but a brief description, as there are but few breeders of choice birds who have not seen, at one time or other, some of their most promising cockerels and pullets "go down on their legs," becoming unable to stand except for a very short time, and then suddenly sinking down up on their hocks: this state of things is not necessarily accompanied with any evident illness, as the birds eat with their usual appetites, and continue to grow. I regard the disease as being occasioned by weakness, either constitutional, or caused by very rapid growth; and on looking over my notes of cases, I find that it is more frequent in the chickens of young than in those of old parents; that it is much more common among cockerels than pullets; and the greatest number of patients have been Cochins, next Spanish, then Dorkings, and but few among the other varieties.

Originally (being over-influenced by a medical friend, who took a different view of the disease) I treated it locally, applying mustard plaisters, blisters, tincture of iodine, &c., to the hocks, but without any good effect. Lately, I have adopted a totally different system of treatment, and with the most marked and permanent benefit. Regarding it as muscular weakness, I have endeavoured to remedy it by giving the birds a fair quantity of flesh-forming food, such as oatmeal, with a supply of worms, snails, &c., and a daily dose of three to eight grains of citrate of iron, and at the same time have kept them out of the wet, and at night housed them warmly. Under this treatment, I have found that the appetite improves, the bird becomes stronger, the comb reddens, and the power of standing and walking returns. I exceedingly regret that I did not pursue this plan with my earlier patients, as I am confident I should have saved many birds by adopting it. One case, in particular, I well remember, as it was that of a splendid Cochin cock, which was forwarded me from a celebrated stock at Wigan; the value of the bird prompted me to use every care as to housing, feeding it, &c.; but, as it frequently occurs in these cases, it caught cold, from want of exercise became rheumatic, and died suddenly from inflammation of the heart. I have now under treatment a Cochin pullet, which could not stand when I received her six days ago, and which now walks voluntarily thirty or forty yards at a time, and stands to feed.

In those cases of leg weakness which I have examined after death, I have found nothing more than an unusual paleness and laxity of the muscles and tendons; this circumstance, and the fact that the disease more frequently occurs in the chickens of young birds, and that it is more common in the heavier cockerels than in the lighter and more slowly-growing pullets, I think fully prove that my suggestion as to its being merely muscular weakness is correct; but whatever view may be taken of the disease, I can state, most confidently, the beneficial action of the citrate of iron. The doses I have found most effectual are

about three or four grains daily to birds of two months' age, and a larger proportion to those which are more mature; the most convenient mode of giving it being to mix in with a small quantity of meal. Although more expensive, I much prefer the citrate to the other preparations of iron in these cases, as it is milder in its action, and is destitute of the powerful (and, in this disease, injurious) astringent effect of the sulphate. The diet should be moderate in quantity, and nutritious, but not fattening; for it is certain that there is no more frequent cause of the disease than the forcing process which is constantly followed with valuable birds, which causes them to grow more rapidly than is consistent with a due development of muscular strength.

W. B. TEGETMEIER, *Tottenham.*

THE COTTAGE GARDENER'S PONY.

(Continued from page 308.)

EVERY other department of rural economy, connected with the humane and enlightened care of the ordinary domestic animals, may be made a source of interest and enjoyment of the most refined kind. But just step from the rabbit-hutch, the poultry-house, the cow-house, and dairy, and the greenhouse, into the stable, and what a different moral atmosphere you begin to breathe! To be knowing about horses has always been considered an equivocal sort of distinction: no wonder that all the best modern essays on the subject have been anonymous. It is to be hoped that better times are coming; even as it is now competent to any gentlemen to speak of his personal experiences in our Australian colonies without seeing every breeches' pocket at once buttoned-up, and an evident unwillingness in any gentleman or lady present to allude to convictions—of their minds, or transports—of the heart.

The first question which stares you in the face when proposing to live in the country, is the expense, and annoyance, and dread of having anything whatever to do with horses, or carriages, or grooms, on the one hand; and on the other, the inconvenience of doing without something of the sort. In the course of my desultory scampers in your columns (remembering all the while that my Pegasus is not very lofty, although I believe he is long-winded enough) I have endeavoured to show that much of the charge of horse-keeping is unnecessary, self-imposed, and conventional; and the whole system too clever and artificial by half; being almost peculiar to our own happy but somewhat prejudiced and vain-glorious land.

In the old-fashioned countries where birth, rank, and station, claim an almost slavish deference, anything like our prevailing passion for ostentatious rivalry in equipage is not suffered to pervade the middle classes. Your kindness permitted me to take up no small portion of your pages, on a former occasion, with a critical inquiry into the "carriage," considered as a means of making a certain appearance, and maintaining a person's station, in society; a thing that I have nothing particular to object to. If no better way can be found out for advertising a man's rank, this one is a very ancient and approved method, no doubt. But the status of a cottage gardener does not require to be set forth with much varnish and a profusion of lace and silver-plated furniture: he just wishes to pass on his way quietly and pleasantly; not vainly loitering on purpose to be stared at; having no ambition to drive or cut his way into a more exalted sphere, he has no professed cook; neither has he a professed groom. Caleb Balderston and the pony, by their honest toil on the land during a portion of their time, contrive to replace no little of what they consume of the earth's produce. Rely upon it, the 'dapes inemptæ' or good things which are of home production, are highly digestible both for man and beast.

The change which has just been made in our assessed tax gives me an opportunity of referring to a former remission of duty, and its results, on men's manners.

A quarter of a century ago, a witness in a celebrated trial spoke of a noted gambler and scamp as a respectable man. "What do you mean by a respectable man," thundered the majesty of the law. "He kept a gig, my lord," was the conclusive answer. A gig of that day was no light affair. It

weighed five hundred weight; cost fifty guineas; paid a heavy tax; required a sound, clever, valuable horse to draw it; and was maintained at a total charge of £70 to £120 a year. It only carried two passengers after all, and afforded no protection from the rain beyond a leather apron and a gig umbrella. But then, it made a bagman, or a blackleg, respectable. But when Lord Althorp took the duty off bi-rotals* under £20 value, thinking, good easy man, to benefit, here and there, a few butchers and parish doctors, small farmers and such like people; it was discovered by the coach-builder, that he could, at twenty pounds, turn out a far lighter, and more commodious vehicle, carrying four people.

Immediately after the introduction of Whitechaps, market-carts, and drags, respectability took refuge in a four-wheeled phaeton; with much weight and polish about the same; moving slowly, from place to place, as if half-conscious of the duty imposed upon it. Now that this duty is reduced from £5 to £2, I fear the phaeton will be not quite so grand a thing as before, though it may possibly become rather more generally useful.

Our transcendental finance minister, in reducing the carriage duties, characterised the old restriction scale as a sumptuary law. No doubt about the matter. Its operation was the same as the wine duty of one shilling per bottle still is. This amounts to an actual prohibition on any but the superior descriptions of wine; and on all but the more opulent class of imbibers. Thus, one of the choicest gifts of a bountiful Providence, "to comfort the heart of man," in England only "comforts the heart" of those who are least in want of consolation; and its use is, by our laws, decreed to form a sort of standard of social position and liberal means and luxurious living. Thus, the better kinds of wine only are drunk, and that by the better classes. So it used to be in the case immediately before us. People said,—as this heavy duty must be paid, we may as well pay it on a fine carriage as on a plain one. At one time, very poor, plain, cheap conveyances, were built, except for the post-masters; and it is curious enough that postmasters, by curtailing much that was unnecessary; by aiming at nothing beyond a certain neatness; and especially by attending to the lightness of the build of their vehicles; have always been able to pay a duty of three-halfpence per mile, and yet *post you cheaper than you could travel by your own carriage.*

A posting conveyance is built at about three-quarters the expense of one of a similar description built for private use; and the lightness of build of the latter is usually altogether made secondary to appearance; while, in the former, appearance is made secondary to lightness of draught.

In the following calculations, the compendium of horse-flesh supposed to be kept, is such an animal as it is not uncommon to find at a country inn, or belonging to a country butcher, or cattle-dealer. These sort of people will usually put you into the way of procuring, at from £18 to £25, exactly the beast you require—about 14½ hands high; not very fascinating in appearance at first, but capable of wonderful improvement in the course of one or two years. Where a full-sized, handsome, clever horse is kept, whether for more extended farm operations, or to draw a large family carriage, he will cost 1s. a week more in hay, and 1s. 6d. in corn. The man's time, and other variable expenses, will be greatly more or greatly less, as business or pleasure is the main object. A smaller pony may, of course, be kept at, say one-quarter less; but then his services on the garden-farm must be wholly inconsiderable as a set-off.

A stout pony may be made to cover the whole of his expenses by confining him altogether to farm-work, except when he takes you to church or market. I certainly think he should ease the man of so much of the laborious part of cultivating and manuring a few acres of farm-garden, as will be a complete set-off against the charge of grooming; but I have no sort of confidence that the whole of my system will be always carried out. Therefore, I have put down grooming at £10 13s. per annum. (We should grow our own oats, but we don't). But, where an elderly gentleman or lady requires driving out every fine day, this wages must be at least doubled, and five guineas added for livery. The cost of a carriage, also, of one description, is about four times that of another. Thus—

1. A two-wheel conveyance, whether market-cart, White-

* Two-wheeled vehicles.—Printer's Devil.

chapel, inside or outside car, or drag, need only cost from £16 to £25.

2. The same, somewhat stronger, with a light moveable head, and axletree bent to keep the whole nearer to the ground, from £28 to £36.

3. A very light, plain, open pony-phacton, with a servant's or child's seat behind, comes to about the same price.

4. A double-bodied headed phaeton, with driver's seat in front, for timid ladies, or grave, elderly gentlemen, £55, and upwards. The latter, also, will take a full-sized horse.

The duty on a two-wheel carriage is 15s.; on a four-wheel, with one horse, 40s.; wear, 20s.; man, 20s.

Rent of an acre of summer pasture-land, in which the pony runs out at night, for, say 20 weeks, £ s. d.
from sunset to 6 A.M. 3 0 0

Cost of two feeds of corn, weighing 5 lbs., given in summer, during the daytime, which feeding is kept in a loose box, 35 lbs. per week, for 20 weeks, at 3d. a pound 2 5 0

N.B. When the pony and man work enough ground to grow your oats this figure would be less.

Man's time—an hour-and-a-half to two hours per day, or 1 day in the week in summer, at 2s. 6d. per day 2 5 0

Rent of $\frac{1}{4}$ of an acre of meadow-ground for winter's keep, at £4 per acre 3 0 0

Corn, 10 lbs. per day, for 32 weeks in winter, or 160 stone, at 3d. per pound 7 0 0

Man's time $2\frac{1}{2}$ hours per day, or $1\frac{1}{2}$ days per week; 32 winter weeks, at 4s. 8 8 0

Straw, $1\frac{1}{2}$ d. per day, for 32 winter weeks 1 8 0

Shoeing, £2; saddlery, harness, &c., £2; tax, £1 5 0 0

Roots for winter use; hiring of hay-makers; groom's time in leading-out manure, &c., are put down as nothing, in consideration of pony's services in and about the allotment 0 0 0

£32 6 0

An ordinary carriage, with care, should last five years, and be worth, at the end of that time, the amount spent in keeping it in repair. This gives £3 7s. for the annual use of the very plainest vehicle, and 15s. tax on the same 4 2 0

Pony's annual deterioration, say 2 12 0

£39 0 0

Extra for wear and tear, and tax, of double-bodied phaeton (driven by Caleb) £10 0 0

Horse extra 5 0 0 annual loss

Ditto 6 8 0 annual keep

Man's wages 10 0 0 extra

Do. livery 5 0 0

36 8 0 extra

39 0 0

£75 8 0

Thus, a serviceable nag, and light conveyance, need not cost you more in the country than fifty pounds or guineas a-year; and, where a good deal of farm-labour is got through, the charge may be reduced again by one-third. But, where a large portion of Caleb's time is taken up in driving, and a very complete little equipage is kept, the expense is greatly increased indeed.

In a shilling Hand-book, recently written, in London, for the guidance of parties living in the country, the cost of a horse for a year is set down at £120. This is not made to include either the expense of the carriage, or the wear and tear and loss from buying and selling horses. On the contrary, in Flanders it is calculated that a small farm of fifteen acres, paying £40 a-year rent, will maintain an industrious family, employ one horse, and leave a profit for the farmer! My own calculation is between the two; I have partly pointed out, however, the secret sources of expense in the one extreme, and of economy in the other. VIEGYOR.

(To be continued.)

BRAHMA POUTRA, OR GREY SHANGHAE FOWLS.

I TRUST you will kindly allow me space in your columns for a few remarks in reply to your correspondent's rather sweeping denunciation of Grey Shanghaes in general, and Brahma Poutras in particular, which I have just read, prefaced by a few remarks by yourself, in the present number (August 25th.) of THE COTTAGE GARDENER.

I am fortunate enough to agree with your correspondent in the opinion that what are called Brahma Poutras, or, rather, the genuine birds of the strain known by that name, are "nothing but Grey Shanghaes;" but from the unqualified assertion he makes that they are "a very coarse variety of the ugliest of them," and very deficient in many of the beauties we are accustomed to look for in buffs and other colours," I beg entirely to dissent. I might, indeed, with equal assurance, make a directly opposite assertion; for, without even knowing your correspondent's name, I will venture to claim, at least, an equal amount of experience with himself as regards this particular strain; but our respective views on these points being merely a matter of individual opinion, you will, probably, attach as much weight to my simply expressing a contrary opinion, as to the strongest assertion unsupported by argument or proof. I think, however, "it will not be difficult to find arguments that will, if not disprove your correspondent's assertion, at least, show that his estimate of these birds is quite at variance with the opinion of all who have had the best opportunities of forming a correct one;" but before I attempt this, I must beg again to differ from him in another statement he makes, namely, that the Brahma Poutras sent by Dr. Bennett "are precisely the same" as the strain of Greys, known previously in this country, of whose history he gives, I believe, a correct sketch. I have had good opportunities of knowing Mr. Stainton's breed of Greys, and must confess my own opinion to be, that they differ as much in character from the American birds as almost any two strains of Shanghae of somewhat similar plumage well can. I am here speaking only of the best samples of either strain, and do not, of course, include in the comparison any of the so-called Brahmas, and I believe there are not a few such that are of mixed origin. But if I am wrong in this opinion, and if, as your correspondent affirms, the two strains are "identical," there is something very inconsistent in the strong terms of disparagement in which he speaks of them in the first part of his letter, and in his afterwards describing some male birds of one of the strains (exhibited by Mr. Stainton) "as splendid Grey Cocks;" nor is it easy to reconcile with his very unfavourable estimate of them, the fact he incidentally mentions, that a pen of the same variety, exhibited at Birmingham, 1851, the first show in the kingdom, were held by the judges of that show to have sufficient merit to entitle them to an extra prize, which prize birds, I may add, were afterwards purchased by one of our most experienced amateur judges, an undoubted connoisseur in poultry matters. So far, then, by your correspondent's own showing, there must, I submit, be no inconsiderable merit in these birds. But to take the Brahma Poutras separately, against which strain, doubtless, your correspondent's censure is intended more particularly to apply, if they are really so "coarse a variety of the ugliest" of Shanghaes, and so "deficient in the beauties we are accustomed to look for in other varieties," it certainly seems passing strange that one of the best known fanciers in the United States of America should have selected specimens of this, in preference to every other variety of which America, equally with ourselves, can boast, as an appropriate present to her Majesty, and that, let it be understood, not under the pretence of their being a new breed, for they were presented to her Majesty simply as "Grey Shanghaes," but chiefly owing to their being held by the common consent of American fanciers (and I say this advisedly) to possess, in a pre-eminent degree, most of the very qualities which your correspondent so expressly denies to them; for their being, in fact, a strain of such rare beauty as to be deemed a fitting and a "dainty" gift "to set before the Queen."

I will only further add, as some confirmation of this approval by transatlantic fanciers, that at all the recent

large shows in this country, where really good specimens of the breed were exhibited, prizes have been awarded them by our own judges, namely, at the "Royal Agricultural," the London "Baker Street," the "Great Yarmouth," and the "Surrey Zoological Gardens" Shows. W. C. G.

TO CORRESPONDENTS.

BEGONIA CINNABARINA SEEDLINGS (*Troublesome*).—If of the nature of the *cinnabarina* the plants will die down in winter. Previously to that time do not let the temperature be much below 50°, if you can help it; but a pure atmosphere, a few degrees below that, will be better than a higher one contaminated with gas, unless you have abundance of air. When the leaves and stalks fade, a temperature not below 45°, and dryness, will do. If they are so small now as to continue growing all winter, then you had better keep them in the gas-heated room, but near a window, so that they may have fresh air.

CONCRETING SURFACE OF VINE-BORDERS AT TRENTHAM (*A Constant Reader*).—When there last autumn, I observed that Mr. Fleming had canvassed over the borders of his early houses to keep them dry. I forgot to ask him how the concreting answered, and did not notice it. Perhaps he will oblige us by stating. I covered a border of vines, for three years, with a thin coating of tar, and a little road drift thrown on it. The vines have borne most abundantly. I removed it this season, because I thought the wood was getting rather weak. Though no water had entered, the moisture was quite sufficient; but the turfy matter near the surface was not decomposed, owing to the absence of air. The roots were very near the surface. If anything, the vines were too fruitful. We have no doubt of the system of concreting answering, even though it should be required to be broken away in several years.—R. F.

COST OF A GREENHOUSE, HEATING, &c. (*J. T. M.*).—You do not tell us anything as to height of fruit, sashes, &c.; and after having, last season, given the average price of wood, bricks, glass, iron-piping, &c., we do not wish to specify what such things should cost at a great distance from us. Near Liverpool, you can have everything in the way of wood-work cut by machinery, which reduces price to the lowest. Suppose you allow so much for bricks and wood, and then take your rule and count the square-feet of glass surface, and allow tenpence, or a shilling, for each foot, you will come near the mark for a fair price of work. For a house twelve feet by ten, you would require from twenty-four to thirty feet of four-inch pipe and a small boiler. You would see how Mr. Fish heated such a small house by a small flue beneath the floor.

IMPROVING A NEGLECTED GARDEN (*H. H. G. M.*).—Your alterations are in excellent taste, and will render the garden economical in its management. The pear-trees, on a low trellis, are rather near the wall, but will do, if you keep them small by root-pruning every other year. Their removal next month, or root-pruning, would accelerate their fruitfulness. As your walk is only five feet wide, the trees should be planted eighteen inches or two feet from the side that you intend for arching over it; and to have the matter perfect, it were as well, if by means of a wall, or concrete, you prevented the roots getting beneath the path, though, considering its width, this is a matter of no great moment. For arching, a north and south walk would be preferable, as receiving most sun to the two sides. In looking over the lists of trees referred to, we advise you to place considerable reliance on the opinion of a local nurseryman. He is likely to have the best stock of what will thrive best in the neighbourhood. You cannot do better than follow Mr. Errington to the very letter. Six feet square is an average distance for *Gooseberry* trees in a quarter. When he wrote of their being *too thick*, he had reference chiefly to the branches of the bushes not being thinned-out. We cannot, just now, lay our hands on the Lancashire grower's advertisements, but very likely your nurseryman has got all the best.

IVY (*L. A. C.*).—The large, broad-leaved Ivy, called "Irish Ivy," is by far the best plant you can use to cover your walls as you propose. Ivy is too often a most ill-used plant; because it grows wild anywhere and anyhow, people take no pains to set it off at first as it ought, and then go about wondering why it does not cling to the wall. If we were intending to plant young Ivy to-morrow, we would dress the border with rotten dung as heavily as we would for a crop of Cauliflowers, and for the first two or three summers we would water it once in ten days with rich liquid-manure, even if it rained all the time. No plant pays for kind treatment so soon as Ivy.

CISTUS (*Ibid.*).—Pray take special care of these beautiful trailing rock-plants. They should have been pruned, more or less, every summer, immediately after flowering; but you might prune away about one-half of your plants now, as they are so woody. The way to do it is this—turn up the whole side of a plant, and you will see the undershoots the most woody. If they grow very crowded, cut off one-half of the longest and more woody very near the bottom; after doing so all round, let the bush take the right shape; now select one-half of the shoots left, and cut them in half their length; and, after this, regulate the plants every year after flowering. When you want to *confine* them, *cut out* the bottom-shoots; for flowering, cut only one-half of the shoots, or cut to different lengths; they come from cuttings easily enough in the spring, before they make flower-buds.

INDIAN RHODODENDRONS (*H.*).—The new Sikkim Rhododendrons are probably what you mean; if so, May is the right time to plant them out; the situation a sheltered one. There are other kinds from India which are so hardy that they may be turned out at any season of the year.

GRAPES SPLITTING (*J. M'G.*).—Are you quite sure the Grape which "cracks a fortnight before ripening," is the White Muscadine? If it is, the roots are past recovery, and the border is unfit for any known Grape, for that is the very last Grape that will crack "in a high greenhouse." Probably your vine is the St. Alban's Seedling, or *Chasselas Musque*; and, if so, it will always crack, do what you will. If your border is good, and well drained, the shortest method will be to plant a true Hambro' or Muscadine; and, as it comes to bear fruit, cut out that which cracks. The brown spots on the fruit is never a sign of disease. It is believed to be caused at the time of thinning the Grapes, when the skin is so tender that the least rough touch will cause brown spots on white berries.

FEATHERS OF RED GAME HEN (*P. P.*).—White feathers would be highly objectionable on the wing of any red Game Hen.

SPANISH FOWLS (*One in the Ring*).—We feel assured that the sentence you have referred to was not written with any intention to depreciate Mr. Fox's birds, but solely to imply the absence of Capt. Hornby's. The continued course of triumphs that has attended the latter for eighteen months, has almost rendered it a matter of course that his name should appear on the prize list with all the honours, and thus the comparatively unusual occurrence of other names, as winners, would induce the mention of his absence. No one, we perfectly agree with you, can safely venture to rest on his oars, either in poultry or graver matters; and to maintain superiority is certainly not less difficult than originally to acquire it. In fact, the vast number of eggs and birds sent out by Capt. Hornby himself, must call for every possible exertion on his part that he may not now be beaten by his own stock. We will again assure you, that no tarnish was thus designed to be cast on Mr. Fox's birds, and none, we are convinced, would more regret such an interpretation of the passage in question than the gallant Captain himself.—W.

CROPPING FOR PIG-KEEPING (*A Constant Reader*).—The best crops to grow for a breeding-sow are Swedish turnips, mangel wurzel, cabbages, and beans. Your land being a light, poor soil, it must be supplied with an abundance of manure, and dug a good depth, to grow these crops to perfection. Each of them should be sown in rows two feet apart. The best *Cabbages* to grow would be the Early Battersea, or York, which would produce food for the sow till the Swedes are fit to use in the autumn. In the beginning of August, the leaves may be stripped off the mangel, not too close, which will produce an abundance of food; and may be continued till they are fit to take up in October. The Swedes should be used first, as the mangel will keep well till the spring. The beans could be grown in double rows, between every third row of the above crops, which, from having plenty of space, would yield well without occupying any extra ground; or they could be grown on a portion of the ground alternately, as a change for the other crops.

KEEPING FLOUR (*M. S.*).—Small quantities are best kept in a covered earthen pan, in a dry, warm closet. No judgment can be formed of a dry, flattened *Calceolaria* bloom.

SMOKING WITH BURNING SAWDUST (*S.*).—The only consequence of smoking with sawdust soaked in nitre will be that you will injure your plants.

HOTEIA JAPONICA (*Thirsk*).—This is now called *Spiræa barbata*. It is a hardy herbaceous plant, from Nepaul, blooms in the early part of summer, has white flowers, and was introduced in 1835.

OUR FIRST FOUR VOLUMES (*Odd Fellow*).—You can have them in any form you prefer by applying to our publishers.

BEGONIA ZEBRINA AND THWAITII.—Any one having plants of these to dispose of will find it answer to advertise in our pages.

MUSTY FLAVOUR IN EGGS (*J. Steward*).—It must arise from the food the hens get. Although they have had the same run in the brewery-yard for years, yet we are clearly of opinion that, in some way or other, they obtain now stale and musty grains, which, in former years, they did not obtain.

MELILOTUS LEUCANTHA.—"Having a large quantity of *Melilotus leucantha* seed, I shall be happy to send a little to any bee-keeper requiring the same, who will send me a *directed* and *stamped* envelope. As I originally received mine through the kindness of a gentleman who made an announcement in *THE COTTAGE GARDENER*, similar to the above, I think it my duty to favour others in my turn. Can any of your correspondents favour me with a little of the *yellow* *Melilotus*? mine is the *white*.—JOHN HUDSON, 12, Nevill-street, Southport."

TOPKNOT OF SILVER POLAND (*C. E.*).—We were asked what we considered the model of a Silver Poland's topknot, and our own taste, as we replied at page 411, is in favour of one perfectly white. This, however, is mere matter of taste; for many, and amongst them Mr. Wingfield, prefer a white topknot spangled with black, and think it most in harmony with the rest of their plumage. It is quite certain that a perfectly white topknot is of very rare occurrence, and it is usually more or less marked with black. When so marked, the most perfectly spangled is to be preferred.

WINTERING GREENHOUSE PLANTS. (*J. T.*).—Some plants, such as Pelargoniums and Fuchsias, may be wintered in such a cold pit as you mention, but not the more tender species.

PLANTING POTATOES (*F. C. L.*).—If you intend only to plough the grass-lands once, we should defer planting until March; then plough, and insert the sets, by the dibble, on the tops of every other furrow-slice; but under any mode it is had husbandry.

DEAD SWARMS (*T. K. A.*).—They died of starvation. When very wet weather occurs in June or July, soon after swarming, the Bee-keeper should examine his hives, to see whether they increase in weight. If they do not, but rather diminish, the Bees should be fed bountifully.

UNFRUITFUL VINES (*H. L. D.*).—The excessive luxuriance of your Vines sufficiently tells why they produce no Grapes; and the cause of that over-luxuriance is "the border, 5 feet deep, composed of loam, rich manure, and tan." This border would do to grow Asparagus and Cauliflowers, but not Grapes. Take up your Vines this autumn; remove all the soil, put in three feet of brickbats for drainage, and have the remaining two feet filled with common turfy loam four parts, and one part limy rubbish. Plant your Vines in this and they will be fruitful.

HEATING SMALL GREENHOUSE (*F. J. L.*).—If you can have a supply of gas, have a small hot-water apparatus heated by gas, as we have on several occasions described. If you cannot have this, have a common furnace and brick flue. The *Five Sisters* Rose is the old Grevillea Rose (*Rosa multiflora*). It is also called, sometimes, "The Seven Sisters." These names are applied because there are so many different tints in the flowers composing one bunch.

COCHIN-CHINA FOWLS (*A poor Man*).—Send us your real address, and we can aid you.

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WEEKLY CALENDAR.

M D	D W	SEPTEMBER 22—28, 1853.	WEATHER NEAR LONDON IN 1852.							Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.			
22	Th	Large Ranunculus; trees.	30.417—30.376	62—47	W.	—	48 a. 5	56 a. 5	8 10	19	7 22	265
23	F	Green-brindled Crescent; h.	30.462—30.457	66—43	W.	—	49	55	8 37	20	7 43	266
24	S	Pearly Underwing; weedy b.	30.460—30.322	67—46	N.E.	01	51	53	9 10	21	8 4	267
25	SUN	18 SUNDAY AFTER TRINITY.	30.239—29.960	66—44	E.	01	53	51	9 54	22	8 25	268
26	M	Brown-spot Pinion; wood s.	29.906—29.884	61—45	E.	—	54	48	10 49	23	8 45	269
27	Tu	Autumn Green Carpet; pal.	29.869—29.692	61—48	E.	63	56	46	11 53	24	9 5	270
28	W	Tri-coloured Green; oaks.	29.391—29.956	62—50	E.	29	57	44	morn.	25	9 25	271

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 65.5° and 45.8° respectively. The greatest heat, 82°, occurred on the 25th in 1842; and the lowest cold, 24°, on the 27th in 1823. During the period 90 days were fine, and on 91 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 393.)



NASTURTIIUM TERRESTRE: Annual Yellow Cress, or Rocket.
Description.—It is an annual. *Root* simple, spindle-shaped, small. *Herb* erect or recumbent, about a foot high, sometimes not more than three or four inches, smooth, bright green. *Stem* leafy, smooth, furrowed, generally branched. *Leaves* lyrate, deeply pinnatifid, partially and unequally toothed. *Flowers* very small. *Petals* pale yellow, shorter than the calyx, often notched. *Calyx* but slightly coloured. *Pods* ascending, of a short, thick, somewhat curved, blunt figure, each on a horizontal stalk, about its own length, and all together composing long aggregate clusters. *Style* permanent, thick and short, with a peltate stigma.

Places where found.—On the banks of ditches, and in damp meadows.
Time of flowering.—June to September.
History.—It was probably unknown to Linnæus, and was confounded by later botanists with the Great Water Rocket (*N. amphibium*). Haller evidently knew it as a distinct species, but Mr. Curtis was the first to detail its characters. Although it prefers a damp soil, it soon perishes in places frequently overflowed. If accidentally borne down by water its stems will sometimes emit roots at the joints. Its flavour resembles that of the Cress and Rocket genera, but is not so pungent as that of the majority of them. (*Smith. Martyn.*)

THE October Meeting of the *Entomological Society* was held on the 5th inst., at the Society's new apartments. Mr. Westwood in the chair. Three boxes of butterflies, from central America, were presented by Mr. Stevens, of Bogota, amongst which were some of the most splendid and rarest species; one, a large *Morpho*, remarkable for the extraordinary effulgence of its blue wings spotted with white, may be considered as the

finest butterfly ever seen. A number of books were also upon the table, presented by the Smithsonian Institute of North America, the Society of Arts of London, the Natural History Society of Liege, Messrs. Chapuis, Candeze, Guerin-Meneville, Lubbock, Stainton, Dr. T. W. Harris, &c. The last-named author presented a copy of the new edition of his valuable "Treatise on Insects injurious to Vegetation in America." The new

volume of "Memoirs of the Smithsonian Institute," contains a curious paper on the parasitic species of plants and animals growing in the bodies of animals. Mr. Stainton presented a Catalogue of the library of the late Mr. Stephens, preceded by a very interesting biographical notice of that distinguished Entomologist. A work by Messrs. Candeze and Chapuis, entirely devoted to the larvæ of Coleopterous insects, was also presented, being a valuable contribution towards the science. The first part, also, of a new projected work by M. Jekel, of Paris, was also upon the table, remarkable for having the text entirely written in Roman characters, in lithograph, by the author himself. This novel plan has been adopted with the view of issuing at a much lower price than could otherwise be done, works of a limited circulation. The title of this work is "Fabricia Entomologia," and it is chiefly devoted to the description of new species of *Curculionidæ*. M. Candeze, of Liege, communicated a request to be favoured by English Entomologists with species of *Elateridæ* in their collections, being engaged upon a monograph of that family. It was also announced that a new part of the "Transactions of the Society" (vol. ii. n.s., part 6), with two coloured plates, representing the transformations of various small species of *Lepidoptera*, was ready for distribution among the members. Mr. F. Bond presented a series of fine specimens of the rare *Pyralis farinalis*, captured in Cambridgeshire, in an outhouse attached to an oil mill.

The business of the Meeting consisted almost entirely of notices of the captures of rare and new species of minute *Lepidoptera*, and of their habits and economy. M. Weir exhibited specimens of the rare little Moth, *Coleophora Wockeella*, and the cases formed by its larvæ, as well as specimens illustrating the history of another species which feeds in the inside of the capsules of *Silene inflata*. Mr. Edwin Shepherd exhibited some very fine specimens of *Cynæda dentalis*, which had been immersed in turpentine, and then covered with powdered pipe-clay, to prevent them from greasing. This is an excellent plan, which should be adopted with all specimens liable to grease, as it does not injure the most delicate-sealed species. These, with specimens of the rare *Coleophora vulneraria*, were taken near Dover, on the coast. Mr. Sam. Stevens exhibited an extraordinary variety of *Limenitis sibilla*, the white markings of the wings being almost suffused with black, taken at St. Osyth; and a new *Simaethis*, from Arundel. Mr. Westwood mentioned that he had reared a species of *Coleophora*, from a cased larva found on Asparagus. Mr. Edleston exhibited a specimen of *Plusia bractea*, to the eyes of which were attached the anthers of a Honeysuckle-blossom. He likewise offered specimens of this Moth to the members. Mr. W. Wing exhibited specimens of a new British Ypsolophus (*Y. verbascellus*), from Norfolk, found on *Verbascum floccosum*; and Mr. Waring a new British Eudorea (*E. phæoleuca*). Mr. Douglas mentioned that he had observed a remarkable larva in the leaves of the Dogwood, which was destitute of true legs, and had only four rudimental prolegs.

When full grown it forms a flattened case for itself, by cutting the two surfaces of the leaf in an oval form, between which it is enclosed. A species, with nearly similar habits, had been described by Reaumur, as feeding upon the Vine, in Italy. Mr. Douglas also exhibited *Golechia brizella*, from the *Statice armeria*, near Brighton, and read a note from Mr. John Scott, of Renfrew, on the supposed indigenity of *Golechia cerealella*; a single specimen only of this most destructive Moth having been taken two years ago, at Renfrew. Mr. Stainton exhibited the cased larvæ of *Gracilaria phasianipennella*, *Cosmopteryx eximia*, and *Elachista testaceella*, the last of which had been well described by De Geer. A note from Mr. Weaver was also read, on the claims of *Lasiocampa calluna* to be considered a species distinct from *L. quereus*; the periods of the year at which the two supposed species undergo their different transformations being very different; the former requiring two years, and the latter only one, to complete its changes. Mr. Westwood mentioned a plan which he had adopted for partially depriving hives of honey, and which he considered superior either to fungus or chloroform; it consisted simply in driving the bees into an empty hive, by drumming on the outside of the full hive, when the combs may be cut out at pleasure, and the bees returned in the same manner as before.

On the *Grey Shanghaes*, miscalled *Brahma Poutra* fowls, we have had many letters. One from Mr. Sheehan we have declined to insert, because he advertises attacks upon us in other papers, and his letters to us are advertisements of his own birds.

Mr. J. M. Bryan, of Ingress House, Milton-on-Thames, says:—

"In your Number of the 8th inst., you justly condemn the want of good regulation in returning the birds from shows. I was a sufferer at the late shows in London. In your report of the show at Great Yarmouth, you omitted to say that I took the first prize for White Aylesbury Ducklings, ten-weeks old. They were good, and fetched £5 10s. by auction. I am of your opinion, that the so-called *Brahma Poutras* are only *Grey Shanghaes*. I received, direct from Shanghai, last month, by the Duke of Portland, a very fine grey hen. I enclose a few feathers from her for your inspection; they are a fair average of her plumage. She arrived in very good condition, and is now laying eggs, daily, two-and-a-quarter-ounces each; she is low on the leg, and a square, well-shaped bird, over seven pounds weight.

"I am not aware that a dealer took a prize for Ducks at the Baker-Street Show, as your correspondent, "Looker On," states; but I certainly think Mr. J. Weston, of Oxford-road, Aylesbury, that took the first prize at Gloucester, and the second at the Surrey Gardens, ought to be considered as a duck-dealer, for he sends about 3,000 to the London market yearly."

The feathers sent are precisely like those on the *Brahma Poutras*. A clergyman also writes to us, that Mr. Weston is a poultry-dealer, and ought not to exhibit as an amateur.

Another correspondent, signing as *Verax*, but who is known to us, writes as follows:—

"The public are much indebted to you for exposing the humbug of *Brahma Poutra* fowls. Many persons, myself among others, have received pullets, above one-half or two-

thirds Cochin-China, for pure bred birds. Good Game hens, crossed with a *pure bred* Cochin-China cock, produce chickens scarcely to be distinguished; and these, again, with a Cochin-China cock, would deceive some of our best judges; and I observe that feathered legs are one of the features which they acquire and retain. They are excellent for the table; perhaps better than the whole blood."

C. H. B. informs us, "There is already a split between the Dr. Bennett clique and the Burnham adherents. By each advocating his own opinion (single *versus* double-comb) they will soon expose all their follies.

"Seeing some remarks as to the weight of Shanghai fowls, I send you the weights, at different ages, of three cockerels, hatched from eggs received from Mr. Punchard on March 11.

		No. 1.	No. 2.	No. 3.
June 17.	weights	5 lbs.	5 lbs.	4½ lbs.
July 11.	....	6¾ lbs.	6½ lbs.	5½ lbs.
Aug. 18.	....	8 lbs.	7½ lbs.	7 lbs.
Sept. 6.	....	9 lbs.	8 lbs.	7½ lbs.

These birds were fed solely on common meal, and had no greaves or meat. If you would wish for any information as to weights of birds not unnaturally fed, I have some of all ages, and would give you the most correct particulars in my power.—W. C. B."

We wish others of our readers would similarly weigh and furnish us with a record of the progressive increase of specimens—pullets as well as cockerels—of other pure breeds.

POTATOES AND OTHER CROPS NEAR THETFORD.—"This year has been, and is now, an unparalleled one. Early in the year the temperature was mild, and the vegetable produce of *Broccoli*, *Cabbages*, &c., most luxuriant. *Potatoes* were very scarce, reaching as high as 6s. per sack; which, I believe, arose more from the lessened quantity grown than from the disease. The common fruits are abundant. I never had more; and my *Straubberries* in profusion, viz., the *Alice Maud*; but the continued wet spoiled very many, destroying their flavour, &c. In this locality, the *Potato* tops (Aug. 31) are dead, as at Michaelmas time; the whole of mine quite dead; and I at first thought, from such premature ripeness, that they were diseased. I was, however, agreeably disappointed. They are all taken up and prove very fine; they are a mealy sort, and rise up abundantly; we eat them daily. I only grew about 30 rods; and have only seen about a quarter-of-a-peck of slightly diseased ones; none from a light and sandy soil; those in valleys rise up very small, but not many diseased ones; on the hills they are quite sound. Among my *ash-leaved* early ones, which rose well, and from eight to fourteen at a root, none diseased; but I observed there were several misplanted, and, upon digging the spot, I found the potato which was diseased had from three to five small ones growing and attached to the old potato, but no stem. I never saw this before; perhaps your experience can account for it. They were very good when boiled. The old potato assumed the precise appearance of a thorough diseased one, and was probably so when planted. Why should it throw out young potatoes attached to it, and not a stem? The present mode of manuring the land for potatoes, probably with artificial manure, may be one cause of the disease. We find the best potatoes grow on light sandy soil allotted to the poor, who have not the means of giving it more than the scrapings of dung from the roads, induces me to think that the soil should be light and mixed; and the best manure is stable dung just from the stable—long as it keeps the land light, and allows the roots to traverse and obtain nourishment. This observation is founded upon a piece of land, well trenched, and a large quantity of rotten manure dug in, which I intended for Lucern, but I planted it with *Potatoes*. They ran to top, which never died off; and, upon taking the tubers up, they were very few and exceedingly small, and several diseased; this piece was not included in the 30 rods before mentioned. I am glad to say the *Vines* here have escaped the blight, and no blight is on

the *Wheat*, &c. We have a most abundant harvest, and never better housed or stacked.—H. W. B."

Potatoes frequently produce young tubers from their sides if forced in the dark during winter, but philosophy has not explained why. We recently saw an old *Potatoe* which had produced two tubers *internally*, and the young ones were forcing their way out through clefts in the parent's side. It was in the possession of the Rev. F. Wickham, at Winchester.

DETENTION OF POULTRY AT SHOWS.—The Rev. G. F. Hodson, of Chew Magna Vicarage, wrote to us as follows, on the 30th of August:—

"Allow me a few lines to state my grievances on the mismanagement, or, rather, gross carelessness, of the secretaries of the various poultry shows. I sent a pen of fowls to the late Surrey Zoological Gardens' Exhibition, on Monday week, fully expecting to see my pets again on the Saturday night (as the show, I believe, closed on the Thursday night previously); but Sunday passed, and part of Monday, when I betook myself to the Bristol Station of the Great Western Railway, to make enquiries respecting my birds, when I was told no birds had yet arrived for any parties in or about Bristol, and that I was not the only one who had made application for their birds. Having waited, fruitlessly, the arrival of a couple of trains, I took my departure; and this morning (Tuesday), at nine o'clock, my birds made their appearance, having taken *four-days-and-a-half* to reach home (a distance of 120 miles) after the close of the exhibition. I am sure, for my own part, and I know many who hold the same opinion, that if secretaries will not give themselves the trouble to secure a sufficient staff of packers, so as to ensure the birds under their care being dispatched as quickly as possible, we must decline contributing to their exhibitions."

We publish the preceding for the purpose of sustaining the attention of the committees of all approaching Poultry Shows to the great grievance Mr. Hodson complains of. We most earnestly warn them to make special arrangements for the undelayed return of the birds exhibited. Exhibitions of Poultry are gradually rising in importance and in conferring benefit by improving and increasing the cultivation of domestic fowls; therefore, it is the duty, as well as the interest, of every Committee presiding over such Exhibitions, to be sedulously careful to have every just ground of complaint avoided.

ECONOMY IN TOBACCO.—We have known rents paid by "a pint of ale" being drank less daily than in preceding years; and this, as well as the following, are only illustrations of that old fragment of economical wisdom,—*"A pin a-day is fourpence a year."*

"Hints are useful things, and I am going to give one. I am a smoker, and so are the majority of men that have to do with gardens. When smoking, but few people burn the whole of the contents of a pipe, in consequence of the bottom-layer of tobacco becoming wet. Now, these remains of the contents of the pipe are invariably thrown away. I, on the contrary, put them into a tin box, where it gets tolerably dry, and comes in very useful for fumigating, or making tobacco-water (and the tips of cigars are similarly useful). I have, just now, about a pound of this, what some people call, waste, which I have been carefully collecting for a few months passed, besides what I have used for my plants. The cottage gardener, being thus careful, would save a few shillings in the year.—R. Hodson, *Liverpool*."

HORTICULTURAL SHOWS. LIVERPOOL— MANCHESTER.

On the 31st of August came off the last Manchester exhibition; and, on the following day, the last Liverpool. As I had the honour of officiating as judge on both occasions, I may be permitted to offer a few remarks on these societies. The Liverpool was held, as usual, at the Botanic Gardens, Edge Hill; the delightful grounds and capacious promenades of which offer every facility and advantage for carrying out such an object in a style worthy of so influential and important a town as Liverpool.

The day was most inauspicious from its commencement, which was gloomy and foreboding; and the huge cumulous clouds which had bedimmed the horizon soon began to discharge their contents over these previously interesting gardens. It rained, indeed, incessantly most of the day, and at last, certain portions of the tents were complete pools; the ladies requiring to pay more attention by far to the selection of their route, than to the fine flowers, fruits, and vegetables by which they were surrounded.

Of course the company was scant, and what ladies came might be seen scampering away in about ten minutes after their arrival. This society, however, has no reason to complain of this untoward circumstance; for during the last few years the number of fine days for their show have greatly preponderated; so much so, indeed, as to be matter of common remark. These shows have progressed very considerably of late years, but one thing will strike an observer who is acquainted with the locality, scarcely second to any other but the Metropolis itself, and that is the absence of exhibition matters from many of the best gardens in that district; for, notwithstanding the present imposing and attractive appearance of the exhibitions, it is obvious that with a "long pull," and "a pull altogether," their character might be augmented very considerably. How is it that such high gardening, as is carried out at such places as Mr. Fairrie's, Mr. Littledale's, and several other places, does not appear for honourable competition? When people live some two or three score miles from a great exhibition one may readily excuse the absence of the valuable stock of high cultivators, who, very naturally, dread having a ten guinea plant injured for the sake of a twenty-shilling prize. But in the immediate suburbs of our great towns, there needs but a handbarrow and a couple of men, and thus transferred, no damage can possibly occur, with ordinary care.

This last show of the season was not, as might be expected, so attractive as the May and June shows, for many reasons. In the first place, Liverpool is like the great Metropolis, "out of town," in some degree; and, secondly, we have had one of the most trying summers on record, if summer we must call it; as an instance of its extreme lateness, only fancy a score dishes, or nearly so, of Jargonelles, and not one ripe enough for table; a Pear that is generally to be had in the beginning of August, only half-ripe on the 1st of September; there is, indeed, scarcely a reason why our Jargonelles should not this year continue up to the Marie Louise season.

As matters of ordinary exhibition, the *Fuchsias* may be pointed to as good for the season. Some of the plants, however, bore the appearance of having been "drawn," probably through the heavy shade of a vinery. There were some respectable *Geraniums* for the season, a few nice sets of *Verbenas*, and, indeed, sundry other groups of things, which, although somewhat hard worn, nevertheless bore the appearance of care and high culture.

Collections of *Stove-plants*, in eight, were remarkable

for good culture, although not up to the London mark; some of the specimens exhibited well deserve special notice, but I would rather point to the general features and impress of the shows of the season. It is somewhat remarkable that such a neighbourhood as Liverpool, the merchants of which have been long notorious for importing *Orchids*, through the medium of the captains of their vessels, which are found in all climes, should not produce a liberal amount of these interesting plants at their shows; but the *Orchids* placed on the tables are few indeed, and by no means remarkable for high character. The greatest advance has, perhaps, been in pot *Roses*, *Geraniums*, *Fuchsias*, and *Azaleas*; the latter are grown quite in the London style at our last May show. Another group may be adverted to as not perfectly satisfactory; that is the Gesneraceous plants. Every body will admit that a choice selection from the genera *Gloxinia*, *Sinningia*, *Gesnera*, *Achimenes*, &c., forms a group by no means unimportant on the exhibition table; but it would appear these things do not take well here, for it is rare to see such a lot of specimens as one might fairly expect.

As extra features of this exhibition, I would point to the very laudable encouragement given to Ferns, Lycopods, British plants, &c. Doctor Dickinson, a medical gentleman of high repute in Liverpool, is very partial to indigenous plants, and annually offers a prize for the best collection. Mosses, too, the Doctor has endeavoured to bring out, but hitherto with small success; the public, however, may rest assured that such will one day be the case; as those who can appreciate mere form, unconnected with floral beauty, in a Fern, are at any time in a position to appreciate similar qualities in Mosses, which, however, in addition, possess much eccentricity of character. In Lycopods, the exhibition has been of late tolerably rich; this is a charming section of the Fern tribe. There is, generally, a good display of Tropical Ferns too; and, although the ordinary observer passes by them, being decoyed by the gaudy colour of flowers, or the rich aroma of fruits, yet it is easy to see that the public mind is expanding in this respect.

In *Fruits*, the Liverpool men have been noted as *Grape-growers* for many years; consequently, very fine black Hambros, and some good Muscats, may be met with here, which would not disgrace the Chiswick table. Whether true or no, an impression has long existed amongst certain practicals in this quarter, that the London *Grape-growers*, in their improved practice during the last twenty years, have stolen a leaf out of the Liverpool men's book. Some good specimens of *Melon* culture may here be seen; and speaking of these, reminds me that a kind of reaction has come over these good people; for, some four or five years since, we might see abundance of hybrid Persians in their various grades, plainly manifesting the Trentham strain; but these, it would appear, have by no means increased; the old Egyptian Green-flesh, with more or less of purity, is again in the ascendant, and no marvel, either. Without seeking to disparage the Persian section, we have nothing finer than the true Egyptian when well grown; that is to say, grown, as Mr. Barns used to observe as to his Pines, with live roots, to which I will add, and with foliage free from insects and green when the fruit is ripe. In *Pines* we had two monstrous specimens of the Black Prince, which originated in this quarter, and appears as though a cross between the Enville and Black Jamaica. This Pine has been of late becoming a favourite, but I cannot think it is long destined to continue so, as it has faults which outweigh any merits it may possess; the latter consisting chiefly in size. These Pines might be some nine pounds in weight, and on examination the prevailing fault of the kind might be readily seen; the upper portion was not thoroughly

ripened, and, indeed, never could be, whilst decay had already commenced at the huge pips near the stalk.

Wax Flowers form a prominent object at the Liverpool show. Miss Newton, a professional of the Mintorne school, and Miss Leatherbarrow, daughter of the very indefatigable secretary, being the chief exhibitors. It will be no disparagement to say, that Miss L.'s flowers are perfectly worthy to occupy the same bunch with those of the professional, who is, I believe, understood to be "well up" in the art.

In taking a hasty glance, therefore, over the Liverpool exhibition, which I have attended as judge for many years, I can but pronounce it one of steady progress, as to the past, and one from which great things may be expected in future. The administrative department is conducted with vigour, and in a manner tending to avoid all confusion, and qualified to give the utmost confidence to the exhibitors; indeed, it is rare to hear of dissatisfied exhibitors. I may now, with due deference, offer a few suggestions as to future progress, which I do the more readily, inasmuch, as if my remarks carry any weight, they will apply to other Societies equally. It is well known, that not all the visitors to these exhibitions are botanists, florists, or fruitists; the majority care not a fig about the progress of horticulture, which, after all, is, or ought to be, the grand basis and aim of all such Societies. It is all very well for other parties to use exhibitions occasionally for other purposes, but our great central societies must not allow their grand purpose to be warped by temporary expedients. But then, the question is, how best to promote so high a purpose? how to draw down abundance of visitors, in order that flourishing funds may enable the executive to act with vigour, without which, vitality cannot long be preserved? I am prepared to affirm, then, that the majority of visitors take their impressions, and feel their chief interest, in the general richness, gaiety, and freshness of the general impress. There should be something, in fact, in the accompaniments which may serve both to attract and to relieve the eye. Plants in pots, however well grown, however rare, are not capable of carrying out the principle in its full sense. I speak, of course, with regard to the ordinary observer. As matters calculated to increase such interest, there are Ferns, Mosses, basket-plants, floral devices, bouquets, and wax flowers; and for an August or September show, choice fruits in pots. As to Ferns, they must continue to advance, in a botanical sense, but they are of much use in the show-rooms as a relief; by their beautiful green unaccompanied by any glare of colour, they throw power on the coloured tribes, and create a zest in the perambulator as he paces the tents. Mosses—here we have untrodden ground, and if Mosses should advance in public favour one day, which I do not doubt, the Fungi will not long remain in the back ground. Simple as these things may be considered, individually, they constitute a feature, and it need scarcely be urged, with regard to public exhibitions, that variety is essential, and that the greater it is—other matters of interest being in due proportion—the more attractive will they prove, and the greater the inducement to visit succeeding ones. By *Basket-plants*, I do not mean simply pots dressed up in baskets, with moss, &c., although these are all very well in their way, but I mean pendulous forms, grown in baskets, and suspended, here and there, from the roof of the exhibition tents. Very little has been done this way, but our worthy friend and clever coadjutor, Mr. Fish, recently devoted a chapter to those things, in which the matter is set in bold relief. Those who are interested in the mode of culture will do well to study Mr. Fish's paper in *THE COTTAGE GARDENER*.

Floral Devices, too, are a source of much attraction, as well they may be; but I must say that we seldom

meet with a high order of taste in these things. Where prizes are given for them, I think it would be well to make it understood that taste in design would, in the eyes of the judges, go before nicety in execution. These floral devices are, of course, generally very rich in colour, and in that respect alone much promote the end in view. Bouquets are, perhaps, the worst done things at our exhibitions; somehow there seems a natural inaptitude in John Bull for bouquet-making; there is too much packing; they look as though the maker had only one object, viz., to get as many flowers as possible crammed into a small space. Cut flowers, in glasses, may be made a matter of separate interest; but they require a different arrangement to what we have been accustomed.

It is a difficult matter for the judges to make their award, where annuals, shrubs, stove-plants, and orchids, mingle together pell-mell; these should be shown in separate classes. The most important classes for this section would be, I think, hardy annuals, herbaceous plants, and hardy shrubs, as the other classes are tolerably well represented in pots, &c. Now, to bring out these objects in a style worthy of such important towns as Liverpool and Manchester, the prizes should be pretty good; and I do think that the councils of such societies would do well to attach more importance to first prizes, and less to second and third. Thus, to give, as I saw in the Liverpool schedule (now before me), ten shillings for the best floral device, seven shillings for the second, and three-and-six-pence for the third, is only to encourage mediocrity. If the aggregate of twenty one-and-sixpence only *must be given*, I would give sixteen shillings to the first, and the remainder to a second. But a good floral device requires much skill in design, and much of trouble in execution; and, I should say, that a sovereign would not be too much for a first, and, perhaps, seven shillings for a second; a third being out of the question.

Having disposed of the Liverpool, I may now be permitted, perhaps, to offer a few remarks on the *Manchester Show*. These, however, must be few, as I have but a very limited experience of affairs in that quarter. The day of exhibition was very auspicious, and a great deal of good materials were gathered together, considering the lateness of the season, and the fearful amount of rain which Manchester, with its environs, is so notorious for, even in ordinary seasons. It must be confessed that neither in quantity nor quality of exhibition matters were they quite equal to Liverpool; at least, to speak more guardedly, they were not so at the last show, which is the only one I have been present at for some time. But, if this be correct, it is not to be wondered at; as, probably, there are more good gardens about Liverpool. The Manchester folks are more of the utilitarian class. But provision is being made which will go far to establish it in a first-rate position. Hitherto, the meetings, like Liverpool, have been held in tents; but, henceforth, it is intended to hold them in a permanent building, to be built for the purpose; a kind of crystal palace. The drawings are provided, and, I believe, all but concluded on. There is to be a very extensive and lofty nave, with, I believe, a dome centre, as a rallying point, and in order to give effect to the sky outline; and a handsome transept, with crescent terminations. Those who are familiar with the interesting gardens of this Society at Old Trafford, will remember the bold promenade which runs east and west before the range of lofty plant-houses. The nave then, I understand, is to run in a continuous line with this promenade, at some distance from its termination; and thus a charming perspective will be afforded through the nave as part of the promenade. If I have any ways misunderstood the affair, I have no doubt some one will set me right, as I merely received a hasty verbal

information. The society is also going to add an April show to the forthcoming schedule; and I will venture to predict, that with the energetic council which now rules the destinies of the exhibition, next year will prove one of considerable advance. Our old friend, Mr. Campbell, is curator here; a man of lengthened experience, and highly esteemed. I knew him thirty-four years ago; he was then gardener to the Compté de Vandes, at Bayswater; and as for myself, I was passing a year at Jenkins' nursery, in the New Road. Campbell is, thus, a man of great experience, and his services are, it appears, well appreciated by the council, as well they may be, for he has done much for these gardens, especially considering the enormous difficulties he laboured under for years. It is not many years since this society passed through a very severe ordeal; it was well nigh dissolution. A few choice spirits, however, real enthusiasts, prominent amongst whom I may name Mr. Potter, stepped forward, and by the prompt adoption of a judicious, guarded, and energetic course of procedure, rallied its constitution; and it speedily became in a convalescent state; and may be quoted now as carrying all the marks of a sound constitution.

Amongst other choice things exhibited at the last show, I may name a beautiful plant of the shy-flowering *Renanthera coccinea*. This was contributed by Mr. Yates, the great Manchester fruiterer, of St. Anne's Square. This was an extraordinary plant of its kind, and only about eighteen inches high, with a splendid raceme of its singularly coloured and highly Chinese-looking flowers. This, very worthily, took the best prize. Having paid a visit to the extensive gardens of Mr. Yates, at Sale Moor, and examined his stock and mode of conducting business, which is somewhat peculiar, and possessed of many features, I may, in a future paper, give a sketch of it to my readers, who, I feel persuaded, will feel much interest in its perusal.

R. ERRINGTON.

BULBS.

(Continued from page 442.)

IXIOLIRION.

IXIOLIRION MONTANUM.—This is a most beautiful hardy bulb from Syria, but being yet so scarce in Europe, it deserves the treatment and care of the half-hardy race. It goes to rest in winter, rises in the spring, and flowers with us in May, under the same treatment as the Squills; that is, in any light, rich border. The bulb is not much larger than that of a strong Dutch-grown Crocus; the stalk is from a foot to eighteen inches high, bearing long narrow leaves and bracts; the flower-stalk, or peduncle, rises from these bracts near the top, and some of them are terminal from a cluster of bracts, and they generally come in twos; the colour is a brilliant blue. Altogether, it is a fine thing for the borders in May. Col. Chesney met with it in great abundance in Palestine, and other places in the east, flowering in April, and his account of it led to the supposition, in this country, that it must have been the "Lily of the Field" referred to in the Sermon on the Mount. The white Lily (*L. candidum*) could not be the one alluded to, as was long believed, because none of the multitude could know that plant, it not being a native of any part of Syria. The "Lily of the Field" is now, by common consent, believed to be the scarlet *Chalcedonian Lily*, which grows in abundance about Galilee, and all around those parts. Our *Ixiolirion montanum* was sent to Dr. Herbert, from Damascus or Aleppo, by Mr. Cartwright, and flowered with him in May 1814 or 1815, I forget which, but he told me, with as much pleasure as a schoolboy would, that he left it in bloom at home, when he came up to the May show at Chiswick, where he sometimes assisted the judges; it

also seeded with him; but I have not heard of it since, and I much doubt whether we have it now or not.

IXIOLIRION TARTARICUM.—This is rather smaller in all the parts than *montanum*, and there are slight differences of botanical separation between the two; yet all that may have been owing to the difference of soil and situation where this was found on the Altai range.

IXIOLIRION SCYTINICUM is another of them, but a much smaller plant than the other two. They were all referred to *Amaryllis* by those botanists who first discovered them; but Dr. Fischer, of St. Petersburg, divided them from that group and named the genus. The three are probably in the Russian botanic collections; they are well worth inquiring after. Some of our consuls in the east might fish them out of the troubled waters after political storms subside. What a nice group these *Ixiolirions* would make in a border, with such blue flowers as *Camassia esculenta*, from North America; the *Cummingias*, from Chili; the *Dianellas*, from New Holland, and the *Squills*, of our own land.

LACHENALIA.

Very few of them are now grown, or worth growing. They do not pay for their keep, being so touchy and liable to rot off; but as some of them are sent home occasionally in collections from the Cape, and as they require much about the same pot-treatment as *Ixias*, I thought it as well to name a few of them among the *Ixia* tribe, and I would further add here, that the more bulbs of them one can cram into a pot the safer they are; and that the rare kinds should be surrounded with the best silver sand, and not be deep planted.

LEUCOCORYNE.

This genus was separated from *Brodiaea*, by Dr. Lindley, chiefly on account of three of the stamens being barren. Two of them, *odorata* and *alliacea*, have white flowers, about the size of Crocus flowers, and *Ixioides* is a light blue flower, as pretty as any one could wish for. They are natives of the south of Chili, and all but hardy, and also all but impracticable to keep any length of time under ordinary cultivation. There are some flowers from Texas which seem on a par with them, the *Cobaea* and *Pentstemon*, for instance. Extreme cold at the roots when they are growing, very warm overhead at the same time, and a scorching heat both for top and bottom when at rest, are the conditions under which they flourish in a state of nature. Mr. W. Rae, the collector sent out by the Horticultural Society, found *odorata* in bloom high up in the south of Chili, where the snow had melted only a few days before. I have seen the Cloudberry myself in flower by the thousands, with a collar of snow about the flower-stalks, in May, and the sun so hot that the top of the snow felt quite warm; there was a rush of water from the snow at the time, and for the next month, which made the ground next thing to a swamp, and as cold as ice. Yet those flowers will not stand more frost overhead than Strawberries, if so much.

No gardener has ever yet been able to cultivate the Cloudberry as a fruit plant. The fruit is about the same size, shape, and colour as the Roseberry Strawberry. Few gardeners can manage *Pentstemon* and *Cobaea*; and, I believe, fewer still the *Leucocorynes*, and bulbs of such habits. I have grown *Ixioides* myself as well as it ever was or will be, by placing the bare bulbs on a slate shelf, covered with an inch of sand all over, and from end to end, the sand being constantly wet all the summer from watering the pots of other plants which stood on the stage.

I think I have mentioned already having flowered *Coburgias*, and other bulbs, that are very shy to bloom, on this shelf.

LEDEBOURIA HYACINTHINA.

This is a very pretty north-of-India bulb; a half-Ixia, half-Amaryllis plant, like *Brodiea* and *Leucocoryne*, to both of which it is very nearly related, and will grow as easily as the now common *Brodiea grandiflora*; but I cannot trace it to any collection, and I am not sure if it is now in the country. Can any one tell me?

LIBERTIA.

These are not actually bulbs, but they look as if they ought to be bulbs, and might be grown in a border, without prejudice to a collection of bulbs. They are Iris-looking plants, with the flowers shaped as in the Peacock-Iris, or *Sisyrinchium* and *Cypellus*. They grow in either peat or sandy loam; *formosa*, the Chilean plant, is all but hardy, if not quite so. The Australian ones, frame plants, that would grow and flower out-of-doors during the summer. Mr. Anderson, who sent home *Fuchsia microphylla*, found *Libertia formosa* in the Island of Chiloe, growing down to the edge of the tide, whence he sent it, and other curiosities, to Mr. Low, of the Clapton nursery, more than twenty years ago. *Grandiflora* is an older plant from New Zealand; *paniculata*, fine, and *pulchella*, from New Holland, are quite as gay as any of their allies, the *Moræas*, from the Cape; *paniculata*, and the snow-white flowers of *formosa*, would make a desirable cross, besides rendering the panicked breed more hardy. It will be difficult to find them in collections, as they go under various names, as *Sisyrinchium*, *Moræa*, *Marica*, and *Iris*.

LILIUM.

The true Lilies are so well known, and their proper cultivation so generally understood, that I need not dwell on them particularly as hardy bulbs. The Japan *longiflorum* and *eximium*, with the varieties of *speciosum*, now called the Japan Lilies, and the great Indian Lily, *giganteum*, which are the chief that would fall into my province, have all been treated of already in these pages; besides, Mr. Appleby has a very good paper on Lilies in general, in a former volume, so that I am forstalled in that direction.

MARICA.

This genus, with its beautiful ephemeral flowers of a day, is also out of my beat here. They are neither bulbs nor half-hardy, but stove-plants, with the habits of the common Iris; yet I have seen them growing out-of-doors in summer, and I believe the greenhouse is the proper place for them during seven or eight months in the year. They all require strong, rich loam, and in that the greenhouse is too cold for them in winter; and in the spring they delight in the strong moist heat of the stove, up to May. *Marica cœrulea* and *Northiana*, are two as beautiful flowers as we can grow, but, unfortunately, they only last a few hours, and only two or three in a day; although, strong, old plants of them keep throwing up a daily succession of them for some weeks.

MASSONIA.

The only beauty in all the Massonias is in their broad recumbent leaves, two of them only coming at a growth, or in one season. These lie flat on the pot or border, right and left, and from between them rise a host of small white flowers in a cluster, with hardly the semblance of a scape or stalk. *Angustifolia*, an odd one we missed in THE DICTIONARY, has the leaves upright, and not so broad as in the others. *Daubenyses* are only coloured Massonias, as far as gardeners are concerned. All of them delight in rich sandy loam, and grow in winter with us.

MELANTHIUM.

This has been an ill-used genus; after being named

from the dark and dingy flowers, the species with such tints have been weeded out of it, and named *Wurmbea*, yet no one sees *Melanths* in cultivation in these days; at best, they are only botanical plants, with Ixia-like leaves, short spikes, of small inconspicuous flowers, and slender bulbs, requiring about equal parts of peat, and loam, and pot-culture.

MILLIA.

MILLIA BIFLORA.—This is really a very beautiful plant, with large white flowers as pure white as snow; they last a long time, and come in succession, and they are as hardy as to live out-of-doors with a slight protection. The name *Biflora* is a very great mistake, by Cavanilles, I believe. I never saw one without four flowers in the umbel, and the peduncle is three or four inches long. The Horticultural Society introduced it from Mexico, and spread it far and wide among the fellows; and if ever a bulb was worth caring for this is one; it lasts a long time in bloom, and is more fitted for a south border than a pot, being long-legged and the parts slender: it will grow in any good light soil all the summer, and go to rest for five months in the winter. The other one, called *uniflora*, I think, has not been much tried. I never saw it, and I think there is some mistake about the naming of it.

MONTBRETIA.

MONTBRETIA FLEXUOSA and *VIRGATA* are two little flowers from the Cape, with exactly the same habit and constitution as Ixias, and require the very same kind of treatment. The genus is in dispute, no two agreeing as to what it is, or should be. The *Botanical Magazine* calls *flexuosa* a *Moræa*. It is a little bright yellow flower; the other is a slender plant, with a purplish bloom, and was also called a *Moræa* by Jacquin, who first discovered it. Sweet and Don, however, place them both as *Homerias*; I believe on account of their monadelphous stamens.

NERINE.

This is a small group of true African bulbs, with the same habit and constitution as the Belladonnas, or true Amaryllis. All those who have studied African bulbs believe *Nerine* to be only a well-defined section of the *Amaryllis*, and many attempts have been made to get crosses between the two, but, hitherto, with no success, although they readily crossed one with the other, and produced some fine flowers. Like the *Watsonias*, there is a great family likeness between the species; the flowers of some of them are wavy, stamens and all, but growing upwards; and about half of the species, in addition to this waviness in the sepals, roll back like a reflexed *Fuchsia*, or *Tiger Lily*. The Guernsey Lily, *Nerine sarniensis*, is one of these reflexed ones; they all flower in the autumn, after a rest of four months, chiefly before the leaf, but some of them show the leaves and flowers simultaneously. *Marginata* is of this habit, and is the one with a red margin to the leaf that we want so much, from the west coast of the Cape colony, as it is all but certain to be the one that will cross with *Amaryllis*, and so join the two sections. They grow from September to May, require abundance of air all the winter, and when once the leaves are full grown, by the end of February, they require to be well pushed on for the rest of the spring, with additional warmth; but they are not so thirsty as *Amaryllis*, nor do they like such strong loam, but in peat some of them spawn so much with offset bulbs, that they will not flower at all; a soft, yellow loam, well-reduced with white sand, is best for them in pots; if they are planted out in a frame, or turf-pit, along with *Brunsvigias*, which is the best mode of growing them, the soil is not so particular, so that it is not too strong to set hard about them. In Australia, the *Nerines* are as hardy as Crocuses, and

there they multiply by seeds and offsets prodigiously, as Baillie Nicol Jarvie would say.

NERINE CORUSCA.—A beautiful, shining, deep pink flower, the segments not much waved, but reflexed. This, and *undulata*, ought to have their offsets taken off every year, as they produce them so numerous as to hinder the old bulb from flowering.

NERINE CURVIFOLIA.—A most beautiful thing, and the best in the genus. If people would but grow it, instead of the Guernsey Lily, they would have something worth looking at; dark crimson flowers of great substance, shining like glass; the segments roll back, but do not wave much; this is the best to cross from; flowers very freely, and the leaf comes with the flower.

NERINE FLEXUOSA.—A very pale pink flower, much distorted, waved, and curved upwards, with six or seven flowers in the umbel. As easy to grow as a Crocus; but, like *undulata* and *sarniensis*, it cannot bear the least confinement.

NERINE HUMILIS.—This is very near *flexuosa* in all the parts, and in constitution, but the flowers are of a deeper colour. No plant is more easy to grow.

NERINE LUCIDA.—Although *curvifolia* has the richest coloured flower, this is by far the finest Nerine ever introduced. Prince Leopold, who was on intimate terms with Dr. Herbert, with whom he corresponded about bulbs, after he was exalted to be King of the Belgians, was the first to flower this beautiful bulb, at Claremont, in 1820. The flowers are bright pink and white, waving upwards, 12 to 15 of them forming a large spreading umbel; *laticoma*, as some have called it, was a well-conceived name for such a fine furnished head of flowers; but *lucida*, by Burchell, had the priority. Dr. Burchell found this plant near the snow mountains in South Africa, between Gattikamma and Akaap, in latitude 28° 50' 60" south, and 24° 3' east, 22 miles from Kloorwater, so that it can easily be traced; for I believe it is lost long since, through the foolish habit of subjecting such bulbs to artificial heat. This bulb is certainly all but hardy, and the leaves are often killed down by frost, in Africa.

NERINE PULCHELLA.—This is a slender, well-defined species, with pale pink, waved flowers, which are striped with red veins, and six or seven of them in each umbel or head; the leaves are a little glaucous, and the bulb is easily known, in a dry state, from its being tinged with purple and green.

NERINE ROSEA.—This also is a well-marked species, or rather a variety of *venusta*, very nearly related to the Guernsey Lily, but the flowers are larger, and of a more brilliant rosy-colour. It is the only one of the genus that has the leaves flat on the ground.

NERINE SARNIENSIS (The Guernsey Lily).—It is strange that this, the least showy of the genus, except *undulata*, should obtain such notoriety in cultivation, while the others are hardly ever sought after. There is not the slightest doubt but that both in Holland and Guernsey the whole family might be raised to the same dignity and importance as the Hyacinth, and by crossing them they would run into improved varieties, just as much as the Hyacinths do. The Guernsey Lily has baffled us, more than the Hyacinth, to flower it yearly in succession—the reason seems to be, that we force it into premature leaf by close confinement while in flower—a practice which all the Amaryllises never fail to resent; what they all want is a very slow movement at first; a sparing of water, till the leaf is nearly full grown, and then an increase of warmth and water, and a constant current of fresh air.

NERINE UNDULATA.—This bulb is a drug in the Cape market. I never knew a collection come home without it, and one can always make it out, on opening the box, without looking at the name, from the clusters of white, soft-skinned offsets which crowd round the old bulbs;

in short, it spawns as freely as a Caithness herring, but the worst of it is, that it is not worth growing at all for its beauty; it has been proved, however, to be the most useful of the family; in the first place, there is no such thing as killing it, and, in the second place, it will cross with the others, and render the offspring all but hardy, without reducing the size of their flowers in the least. A cross between it and *curvifolia*, called *versicolor*, or *Mitchamiae*, after Mitcham, in Surrey, has sixteen flowers in the umbel; rosy-purple, with the midribs of the segments red. A beautiful thing, which, if crossed again with *lucida*, would give us one of the most beautiful flowers.

NERINE VENUSTA.—This is the type of the section of the Guernsey Lily, and is longer and deeper-coloured than it, and is a much better plant, and more desirable, from the leaves coming at the same time as the flowers, of which there are five or six in the umbel. There is a beautiful miniature one called *minor*, that has never been figured or described, making the fourth variety, *rosea* and *sarniensis* being the other two; but let *lucida*, *curvifolia*, and *venusta*, be brought together and crossed, and let the despised *undulata* add hardness and numerical strength to the offspring, providing *lucida* is not quite so hardy as *undulata*, and then let the disposition to an earlier leaf be encouraged among the seedlings whenever it is noticed, until the most delicate tints, from crimson to French-white, are blended on umbels of from twelve to twenty flowers in each, having, at the same time, deep green foliage at least half as high as the scape when the flowers are in full beauty, and nothing finer can be expected from bulbs until they find out how to breed the Hippeasters with Habranthus.

D. BEATON.

(To be continued.)

HARDINESS OF THE WHITE INDIAN AZALEA.

MUCH has already been said of this tribe of plants in our pages. For utility as an ornamental plant, few can outshine this fine old Azalea, whether forced into bloom at Christmas, coming naturally into bloom in the greenhouse in spring, or, by being retarded, ornamenting rooms and cool greenhouses in summer. A dozen of years ago, our attention was directed to its comparative hardiness. A friend of ours had several huge plants, in giant pots and tubs, which had outgrown the wintering space he could afford them, and after rustivating several winters in stables, wood-barns, &c., they were finally consigned to such shelter as a large deciduous tree could give them. Here they survived several winters, and bloomed less or more the following summer, and I believe *now* might have survived to this day, and constituted, by their large size, an ornament to the shrubbery, if, instead of standing in their pots and tubs, they had at once been planted out, and received a slight protection for the first year or two. Many of our readers seem as yet unaware of the greater security enjoyed by any plant with its roots secured in the earth, instead of being exposed to the sudden alternations of heat and cold, dryness and moisture, likely to be the consequence of keeping plants in pots.

For the full elucidation of the hardiness of this plant, we are indebted, so far as I am aware, to Mr. Fraser, gardener to — Leigh, Esq., of Luton Hoo Park, a place which, after years of comparative neglect, is now being improved with such princely liberality, that it will far outrival what it was in the days of the first Earl of Bute, when it had received the finishing touches from Capability Brown, assisted by the experience and the enthusiasm of Peter Collinson. Some "other day," I

may give an outline of this place, but, passing for the present from such tempting subjects as Orchidæ in bloom, and Ferns of such size as would delight our friend, Mr. Appleby, and such huge bunches and large berries of the Black Morocco Grape, so difficult at times to set regularly, as would make lovers of fine fruit gaze more than a second time, I confess that fine, healthy plants of this White Azalea, growing more freely in the American plant clumps than ever I saw it in a pot under glass, and which, Mr. Fraser stated, bloomed finely this summer, and had already stood uninjured for several winters, without the slightest protection, pleased me exceedingly, as bringing at least one plant within reach of the million, that used only to be associated with the aristocracy of glass houses. The shoots were luxuriant, foliage as yet of a rich green, and yet the points of the shoots were rounded, prominent, and firm, showing that already the flower-buds were fully formed. Most of the plants were from a foot to eighteen inches in height, and with heads rather more in diameter, and had thus stood, uninjured, in an undulating valley, where many things generally considered hardy had been nipped or killed to the ground by the frost of last spring. Mr. Fraser has hundreds of young plants raised from cuttings this spring, which he means to turn out next season.

LOAM.—SOIL FOR HAIR-ROOTED AMERICAN PLANTS, &c.

It is not to be wondered at that so much uncertainty should exist amongst the uninitiated respecting soils. Many are the enquiries from ladies as to what gardeners mean by the *loam* they are always talking about, and more especially that very precious commodity, "*maiden loam*." By the latter, is merely meant soil that has been growing no crops but herbage, and which is full of fibrous roots, which cause it to adhere closely together, such as may be found by taking up a sod from any old pasture, or from a highway side, as was recommended the other week. Loam, in fact, is merely good soil, in opposition to sand, clay, chalk, peat, &c.; and its qualities are defined according to the preponderance of these various matters associated with it,—as a sandy loam, a calcareous loam, a clayey loam; and thus, a free loam, or a stiff loam, a close loam, a fibry loam; and then as to colour, a dark loam, a hazel-brown loam, &c.; the last, in general, being preferable to all others for pot-plant cultivation.

Other readers complain, and with more reason, that we gardeners seem to use synonymously the terms heath-soil and peat-soil, and that thus vexatious disappointments are the result. Witness the many directions as to composts, in which *loam* and *peat* are the constituents, and yet we would as soon attempt to fly, without the appendage of wings, as give to such plants a particle of that soil usually denominated *peat*, and which, from the vast quantity of decaying woody fibre it contains, is used so largely for fuel; and also, in certain circumstances, as manure, especially when partly decomposed by the action of *lime*. In every case, then, in which a proviso is not given to the contrary, the term *peat* should merely be considered as *heath* mould. For the want of knowing this, I have known several instances of enthusiastic beginners carrying home baskets and handkerchiefs full of bog or peat earth, only to insure, by its astringency, the decay and death of the favourite plant to which it was presented. If possible, the term *bog* is even more inappropriate than *peat*, as the word is associated with a low position; and water, or quagmires more or less prevalent. Now, all three terms, unless expressly mentioned to the contrary, mean the same thing; and that not the rich decomposing matter, formed, and forming under water, or in damp places, and, therefore, full of astringent, vegetable

fibre; but a dark, sharp, sandy soil, full of vegetable fibre, found on high grounds, beneath a surface covered with heath and other herbage, such as occurs on Wimbledon Common. No one comparing the two could form any mistake between them. If we could agree to use the term *heath* mould, all obscurity would vanish. The moss, the sphagnum, and even the fibry matter, found in natural peat bogs, when hard-pressed, and thoroughly dried, become rather useful ingredients in the culture of Orchidæ.

For Heaths, Azaleas, and Rhododendrons, this heath soil is still invaluable; but the strange part of the affair is, that when that kind cannot be got, they will then do the best in the very opposite,—a very clayey loam. The natural bog-earth, obtained from the cleanings of stagnant pools and ditches, well aerated, and full of vegetable fibre, has at times done well in growing the hardier Rhododendrons and Azaleas, and yet there is so much uncertainty about it, that a prudent person would hardly be justified in going to any extent without previous experiment. There was a wonderful quantity of the best of this material collected before making the American clumps at Luton Hoo, and Mr. Fraser used it rather liberally, after being certified, by many persons of great experience, that it could not fail to grow American plants in splendid condition, some of these being the leading mercantile professionals of the day. I confess myself to being guilty to a spice of covetousness when handling and smelling the beautiful stuff, it being impossible to procure any such material, with any approach to economy, in this quarter. But, to the disappointment of all concerned, a great many of the best plants, and whole groups of Rhododendrons and Azaleas, refused to budge onwards; they stood still, if they did not go a few steps backwards; their very attitude saying as peremptorily as possible, "No; we won't have your fine stuff; let others have it who like it better." Fertile in resources, as gardeners should be, Mr. Fraser looked and grumbled; but he did not stop there; a quantity of marly, clayey loam was procured, looking for all the world as if it had come deep down from the foundation of a house, and having lifted a number of plants last season, a good dose of this clayey loam was given to each of them. A large pile of the same material is collected for farther use. A glance will tell you where the loam has been—Azaleas healthy and luxuriant, full of flower-buds, and Rhododendrons with buds equally prominent, and foliage of a deep rich green. Only yesterday, Mr. Fraser pulled up a young plant, and there was the unctuous loam adhering to the original ball, and already occupied and perforated by myriads of fibres. The addition of this loam will, no doubt, give solidity in time to the boggy material.

The above will so far illustrate the statement above, that when heath-soil cannot be obtained for American plants, then the opposite, in the shape of a rich, adhesive, clayey loam, would seem the next best alternative.

I may mention another case in addition. I had seen the Rhododendron growing in almost all kinds of loam, in various parts of the Island; but, some twelve years ago, I had not learned that it had a particular dislike to soils containing any quantity of chalky calcareous matter.

I never attempted to form an Azalea group out-of-doors here, as the distance from heath-soil was next to an insurmountable objection. The surface soil was a stiffish loam, with a portion of calcareous matter; this loam resting on clay, and that again on chalk, at a greater or lesser depth. In forming the pleasure-ground, a quantity of turf was taken off very thinly, piled in a heap, chopped and turned several times; had leaf-mould and sand added, and with this I hoped to grow Rhododendrons to perfection. But I counted without my host, for few of them ever made much wood; never became

large and vigorous; and some died outright. So that what were intended for *Rhododendron* groups are now a sort of *oninum gatherums*.

Years later, the levelling of the soil had left, where a clump was deemed necessary, scarcely anything but clay. This was broken up, but not finely, a little leaf mould was incorporated with it, that had previously been well aerated. Smallish plants were planted, with such balls as they came in from the nursery; the soil was squeezed firmly about them, and, to prevent such adhesive material cracking in summer, short grass, or leaf mould was spread over the beds in spring; and though they have not done anything remarkably, they have yet grown and bloomed in very fair condition. I believe the failure after the careful preparation, in the circumstances, was owing to the presence of chalk or lime, and to the material not being sufficiently dense, and to the fibre in the turf not being sufficiently shortened and disinfected. The small roots seem to delight in wreathing themselves round the adhesive clay. Those who wish to try a clayey soil would do well to have the plants in a young vigorous state. Hardy Heaths seemed to flourish in this reddish clayey loam, at Luton Hoo, just as well as the *Rhododendron* and Ghent Azaleas, and they presented every appearance of being easily moved, if ever it would be desirable to lift them for forcing. Some of the smaller *Rhododendrons*, such as *ferrugineum*, had foliage so large as to lead me to ask what it was. My chief object in mentioning these matters is to elicit the result of comparative experiments.

R. FISH.

JOTTINGS BY THE WAY.

(Continued from page 464.)

HEATON NORRIS, near Stockport, the seat of — Phillips, Esq.—I visited this place for the purpose of seeing my old friend, Mr. Hamilton, the gardener, who, as is well known, has caused quite a revolution in *pine culture*, he being the first to adopt the method of planting them out of the pots into a bed of earth; and that method he still follows with perfect success. I saw them growing in all stages with the utmost vigour and health, and plenty of fine, well-swelled fruit. One stool, or plant, was pointed out to me, that had borne, without shifting, twelve fruit in five years; and these not small ill-favoured things, but respectable-sized fruit, averaging four pounds weight. These pines are kept in health, and strength, and size, by frequent additions of fresh, rich earth, and waterings with liquid-manure. The air of the houses is kept very moist during the spring and summer, and the plants are frequently syringed over head, excepting when the fruit is ripening. Round the curbstones, and on the back shelves, there are several plants of the Orchid tribe thriving luxuriantly; which was proof sufficient for me that the air had been surcharged with moisture as well as heat.

MOUNT PLEASANT, the residence of W. Cruttenden, Esq. This place adjoins Mr. Phillips's. There is a very fair collection of *Orchidaceous plants* grown here, and a house devoted entirely to the Heath tribe. It is a very neat, well-kept place. The back wall of the Orchid-house presented to me a singularly beautiful appearance, being covered with the better kind of *Ferns* and *Lyceopodiums*, growing in baskets, shaped like large swallow nests. They were flourishing most luxuriantly, the drooping kinds hanging down gracefully, and covering the otherwise naked wall with living verdure. Where there was plenty of light, near the glass and opposite the end walks, several species of the beautiful flowering *Æschynanthus* were planted in the baskets, which hung down and flowered profusely. These nest-like baskets are formed with cement, and appear to be very lasting.

This method is worthy of imitation; many a blank, unsightly wall, that I have noticed in various places in hothouses, might be rendered very interesting if clothed in a similar manner.

THE FENCE, near Macclesfield, the residence of Thos. Brocklehurst, Esq. This place is noted for a collection of my favourite plants, the *Orchids*. Here I spent many happy years as gardener, studying the habits, and cultivating successfully, these most interesting plants. I was happy to find them doing well under the fostering care of Mr. Pass, who succeeded me. It is now nearly ten years since I left, and during that time there have been numbers of new splendid species introduced. These Mr. Brocklehurst, with his usual spirit and liberal allowance to his garden, has purchased, and thus keeping pace with other growers, the collection is most unique.

I noticed the following in flower on the day I visited the place:—*Cycnoches pentadactylon*, a rare species, and a fine strong plant, with three spikes of its curious flowers. *Aerides quinquevulnerum*, a noble plant, with two long spikes; each flower large and distinctly spotted. *Acineta Barkerii*, with a long spike of rich golden flowers. *Angræcum caudatum*, the Ivory plant, three spikes, showing very strong. *Bolbophyllum Lobbii*, very pretty; five flowers. *Cattleya candida*, a large plant with many flowers. This species is delicately beautiful, and ought to be in every collection. *Calogyne speciosa*, very large dark lipped flowers. *Dendrobium aduncum*; this delicately coloured Dendrobe flowers at this time of the year, and on that account is desirable. It is a beautiful free-flowering species. *Gongora Batemannii*, the best of the genus. *Marmodes lineata*, curious and prettily-streaked flowers. *Miltonia candida superba*, a decidedly superior variety; the flowers are much larger, and brighter colours than the species. *Miltonia spectabilis*, two large masses in bloom. *Miltonia spectabilis bicolor*, remarkable for its rather small, but highly-coloured distinct spot on the tip. *Oncidium incurvum* and *O. incurvum major*, both beautiful, the latter especially, on account of its much larger blossoms. *O. papilio*, the larger variety. This butterfly-like flower is handsome, and especially worthy of cultivation wherever there is a stove, for it does not require so much heat and moisture as any other *Oncid*. *Peristeria elata*, the beautiful Dove plant, so named by the Spaniards, who first discovered it in South America; here it was producing numerous its eup-shaped blossoms, with an exact resemblance of a small dove, with beak and expanded wings complete. *Phalaenopsis amabilis*, and *P. grandiflora*, good strong plants; the best bloom over, but yet many flowers on them. *Vanda tricolor*, a long, good spike on a strong plant. *Vanda* (new species) with a rich purple tip. I suspect this to be a fine variety of *V. Roxburghii*. *Sobralia macrantha*, with high-coloured flowers; and of *Stanhopea* many species.

The above list will show what plants of this tribe flower in August, and so far will be useful. Since I left this place, there has been a considerable addition to the glass structures, for growing the Vine, the Melon, and Cucumber. In a large pit, occupying one-half of one of the Orchid-houses, there are some good Pines growing, proving that the heat for the Orchids suits the Pine-apple.

CHESTER HOUSE, Chester Road, Macclesfield, the residence of W. Barnett, Esq. This gentleman, whom I have had the pleasure of knowing for nearly twenty years, is a most ardent lover of flowers. His greenhouse is not large, but is always full of bloom all the year round. This is managed by having reserve pits in his kitchen-garden. When I called, there was in flower many of the choicest *Geraniums*, even so late as the 18th of August, besides of Fuchsias, Petunias, and Verbenas, the best; *Lilium lancifolium*, three varieties, and "many others, too numerous to mention," as the auctioneers

say. In a vinery, I noticed some fine Black Hambro' Grapes on vines planted, I believe, two years ago. Near the vinery, I saw some well-grown Chrysanthemums showing flower-buds, as well as a nice collection of Camellias. These are to succeed the other greenhouse plants as soon as they are out of bloom.

That which most interested me at this place, was an experiment in cultivating the *Potato*, with a view to prevent the dire disease from affecting the bulbs. I remember reading, some time since, an extract of an experiment of a similar nature. It is to plant some other plant amongst them. Mr. Barnett planted the common garden Bean for that purpose, and his gardener assured me he had not found a single diseased bulb up to the day I was there, though the foliage and stems had evidently suffered greatly with the disease. As I know Mr. Barnett is a reader of *THE COTTAGE GARDENER*, let me add, that I am sure both the Editor, myself, and our readers, would be much obliged by his sending the final result of the experiment. If successful, it will be one of the most important discoveries in horticulture for many years.

T. APPLEBY

THE HYACINTH.

(Continued from page 463.)

CULTURE IN BEDS.—*Soil.*—To grow Hyacinths well in beds the soil should be rich, light, and deep, supposing the soil of the garden is a sound loam, and well-drained. Then fix upon the beds intended for these bulbs, and excavate it to the depth of fifteen inches. Level the bottom, and place a layer of small stones, or brick-ends broken small, two inches thick. Cover this drainage with two inches of littery dung; then mix the soil that has been thrown out with some well-decomposed cow-dung, some leaf-mould, and plenty of river or sea-sand, well screened. The proportions to be one part cow-dung, one part leaf-mould, to six parts of loam. Should the substratum be clayey, or gravelly, that part must be wheeled away, and as much good loam added as will replace it; then mix the compost well together, and fill the bed with it; let it be four or five inches above the former level, to allow for settling; lay it perfectly level, so that it may have the full benefit of the rain that falls upon it. This preparation of the beds should be done immediately. If there is time, it would be all the better for a turn over before planting. I may just remark, that if cow-dung cannot be procured, hotbed dung, well-rotted, will do; but I greatly prefer the former, because it is of a cooler nature, and, generally, has less straw amongst it. I have used cow-dung gathered out of a pasture with capital success.

Planting.—The best time for planting is the first week in October; though, if the weather is mild, they may be planted as late as the middle of November. Much depends upon the weather and the state of the ground. It should, by all means, be moderately dry, and, therefore, it is better to wait a week or two should the season at the right time of planting be wet. To prevent treading upon the bed at that time, lay upon it a narrow piece of board long enough to reach across it, or have the board strong enough to bear the planter's weight, and raise it up at each end high enough to clear the bed; then procure a dibber to plant them with, which should be thick enough to make a hole as wide as the largest Hyacinth is in diameter, and the end that is thrust into the soil should be cut across, and a mark made just as far from the bottom as the bulbs should be covered with soil; the proper depth is three inches from the top of the bulb. Anybody, with a saw and a knife, could make such a one. Having a fine day, and the board and the dibber ready, then bring out the bulbs and place them on the bed just where they are to be

planted. Each Hyacinth should have at least five inches to grow in, but six inches would not be too much space for the leaves to expand, especially if the same bulbs are to be planted again the following season. If the colours are to be mixed, place them so that the colours will succeed each other in rotation, as, for instance, 1, red; 2, blue; 3, white; 4, yellow; then 5, red, and so on, till the bed is full; or, if there are several beds, and it is desirable to keep the colours separate, so that one bed shall be red, another blue, another white, and another yellow, then plant them accordingly. For a geometrical flower-garden, the latter mode will be preferable. As soon as one bed is placed with bulbs, then fix the board across at one end, and proceed to plant them. As the planting proceeds, have some of the compost ready, sifted through a coarse sieve, and fill up the holes with it. This is much better than levelling the holes with a rake, because they are, when so covered, sure to be at the right depth. When all is planted, then rake the bed very lightly, and the operation is complete.

Shelters.—The Hyacinth is hardy enough to bear a moderate degree of frost; but it is advisable to cover the bed with about two inches of spent tanner's bark, to be removed early in spring, before the shoots appear above ground. Where this is scarce, half-decayed leaves would answer the same purpose, or a mat or two thrown over the bed would be protection sufficient. These shelters are for such Hyacinth beds as may be in an ordinary flower-garden on the lawn, or in beds, in a geometrical flower-garden, with box, or other edgings, and gravel walks. If an amateur, or florist, cultivates the Hyacinth in long, common beds, like Tulips, a permanent shelter should be put up in the form of the bed, or the beds might be sheltered with hoops and mats. These kind of shelters can be used when the bulbs are in flower as a protection from sun, wind, and heavy rains. If so protected, the season of bloom will be considerably prolonged.

Water.—As the season of the Hyacinth's growth takes place during winter and early spring, it very seldom happens that they require much water at the roots, but, during dry, parching winds, which, sometimes occur in March, a slight sprinkling over the beds will be acceptable to the rising buds. In frosty weather, this should be applied in the mornings only; but, if there is no appearance of frost, then water in the evenings also, previously to putting on the shutters for the night. This sprinkling may be continued with advantage till the blooms begin to expand. As soon as the bloom is over, the old flower stems should be cut off, but not quite down to the ground, the covers removed, and as soon as the leaves turn yellow, the bulbs should be taken up and laid upon a mat to dry. By being laid up on a mat they can be lifted easily under shelter in heavy rains, which would injure them much if allowed to fall upon them. When the leaves are all quite decayed dress them off carefully, without bruising the bulbs, and then put them away in a dry, cool room till the planting season comes round again.

T. APPLEBY.

STRAY NOTES ON PLANTING SHRUBS.

ALTHOUGH, in the general routine of gardening operations, each season has its peculiar duties, which, if not done then, often tell for the remainder of the year, or rather until the return of the same period again, yet there are periods in which certain operations seem to call for more special attention than others, as those relating to the spring and early summer. The progress then making renders it imperative for good cultivation that every seed or plant then requisite to commit to the earth should be done without delay, in order to meet the requirements of after-times; and a little more than

the usual energy displayed at that time, will, in most instances, be rewarded with corresponding success, and more after-leisure. Now, though it would be wrong to say that the present season, September, has not important duties of its own to be performed, and these enhanced, too, by the long succession of wet weather we have had, and may still have, yet, when circumstances render any extensive out-door alteration necessary, this is not a bad season to get on with it; for the most of our shrubs, especially the evergreen ones, move and plant with the best chance of success just now; and when we consider the many advantages which early operations have over late ones, it behoves all those contemplating such change to be on the alert, in order to avail themselves of all the advantages fine weather commands, which is certainly more likely to occur in this month than the two succeeding ones.

Wherever, therefore, new shrubberies are to be made, old ones altered or remodelled, or solitary specimens taken up and replanted, the present is certainly better than a later season.

Turf may also be included in the same category. Flower-beds, however, that are perhaps under a heavy crop of plants, still ornamental, must be left alone for some time, unless under special care, when they might be sacrificed to the sweeping effects of a change; however, the arrangement of them, and the remodelling of a flower-garden, whether on the geometric or desultory plan, I willingly leave to others; suffice it to say, that the more formidable job of making new walks, roads, shrubberies, or of levelling and laying down turf, cannot be done at a more suitable time than the present; besides which, the commencement of such things sufficiently early in the season gives greater hopes of their being finished in time, should adverse weather or other circumstances intervene; but it certainly is advisable to get all the planting of shrubs and trees done as early as possible, in order to gain all the benefits which the autumn affords to their attaining fresh roots; and being, in other respects, established in their proper quarter before winter sets in. In addition to this, turf that is laid down now will unite and grow before winter prevents it, and present that uniform appearance so much desired. Deciduous trees had, however, better remain until their foliage be a little more ripe; it is not necessary that it should all have fallen off, but sufficiently matured to drop off without force; but the whole class of hardy evergreen shrubs might be planted now with a better prospect of their doing well, than if the operation was done at any other time; other things being the same.

Prior to the commencement of any large alteration, it would be advisable to consider well the various points on which such alterations bear; as it would be gross mismanagement to bury all the good soil in a large hole, or hollow place, merely for the purpose of rendering a certain spot of ground level, or otherwise agreeable to the eye; such an alteration might suit the purposes of a road surveyor or builder, but not the cultivator of plants. This point must, therefore, be borne in mind at the beginning, so that, by arranging the trenching, &c., all the good soil be retained at top, and if it be in turf or pasture, some of the bulk might be preserved for any purpose it may be wanted for, whether that be to re-lay again, or decay for the use of the potting bench; of course its removal is so much loss to the ground it came from, and it need not be done so in those places where it is wanted for the benefit of the plants, &c. intended to bring there. However, these matters must be determined by the nature of each respective case; only one thing we would strongly urge, that when it is removed for any purpose, its place ought to be supplied by something else that is good added to the ground; for, if the well-being of the shrubs, &c. be an important point (and it often is so) a liberal allowance of substantial food must

be allowed them to grow in; this may often be secured to them without the importation of much fresh material, when the most is made of what is there; this we therefore strongly urge on our young friends to see to without delay, and before they commence operations, for it will often happen that ill-directed labour buries and destroys much valuable matter before it be aware of the uses it might be applied to; however, on ground approaching the extremes of stiffness, or dry, hungry lands, the addition of matter of a contrary description will be attended with a beneficial result; while in these extreme cases, the selection of plants suitable to each ought also to be carefully studied, in order that the best may be made to meet the individual cases.

Thus, certain plants delight in a dry, gravelly, or chalky soil; others preferring a stiff loam; while the beautiful class called American plants like moist peat, but do not object to grow in a cool soil of another description, but have a decided objection to chalk, or soil in which lime predominates. This latter substance, being directly opposed to that in which they thrive, ought never to form an item in the same mixture as peat, for, though a peat bog may be ploughed up, and the admixture of lime may do much for destroying that fibrous matter with which it is bound together, yet we are far from certain whether this is not affected by the annihilation of some of its properties most necessary to retain for the purposes of plant culture; if, therefore, your gardening operations extend over any tract of ground of this description, you may rest assured that you have found out the best possible site for the most beautiful class of flowering shrubs we possess; and, before anything else is done, consider well how much of it you can allot to this section, for you will find that some expensive alterations will be necessary to make it available for other things, which, after all, would not look so well.

Turning from the peat-bog, or morass, to one of a decidedly opposite nature, "the sand-bank," the number of plants available here is limited; yet we have seen a large embankment, formed by a railway cutting, rendered very interesting by such plants as Box, Furze, Yew, common Laurel, certain Privets, &c., Not that they all presented a thriving appearance, for, excepting the wild Juniper, few did not give signs of wishing for more nutritious food; yet they grew and looked tolerably well; and which would, in any other case, have been a barren mound, became an interesting clump; for even grass would not have grown on it in anything like a satisfactory manner, for the least drought would have turned it brown and unsightly.

There are, also, certain herbaceous plants which will not even grow on such a position, but the *Tropaeolum tuberosum* will make a tolerable show there, at certain times presenting a mass of healthy foliage, and in such situation, is more likely to flower, also, than in the rich borders of the ordinary flower-garden. Even hills of entire chalk are scarcely sterile, as the common Yew and Juniper are found wild there where the coating of earth is very slight indeed; while such a position would be instant death to the numerous family of Rhododendron. Now, as each class presents ample variety, it behoves the careful cultivator, intending alterations, or adding new features to his grounds, to consider well the various plants adapted to each particular case, and to act accordingly; for, be assured that no after-management, however skilful, can so far alter the condition of a plant as to reverse its constitutional habits and wants.

J. ROBSON.

CULTIVATION OF WHITE MUSTARD.

THE growth of White Mustard, as green food for sheep, is very much on the increase, and is certainly an excellent substitute for many other green crops usually considered of more importance. Although it is not so nutritious, nor productive of so heavy a weight of food as many other kinds of green crop, such as Trifolium, Tares, &c., it can be sown much later in the season, and as it comes to maturity for feeding in the course of five or six weeks, it is much used for sowing after Tares, and other green crops, thus filling up a vacuum in the rotation, furnishing food for stock, and saving the tillage which the land must otherwise receive, to keep it in the fallow state, and prevent the growth of weeds.

This crop also answers the purpose of manuring; in some districts, and where green crops are ploughed down and buried in the soil for manure, it is better for the purpose than any other, as it grows so rapidly, that, in case it may be thought desirable, several crops can be grown in succession during the summer months, and all may be used for the same purpose, with advantage, upon heavy soils, instead of the naked or bare fallow. The practice of ploughing-in green crops is, however, nearly obsolete, it being found more advantageous to consume the green food with sheep, and take the profit arising from feeding the stock, in addition to its value as manure.

Mustard may be grown upon almost any kind of soil; but the crop will be in proportion to the condition and state of the land, good soil not only growing the best crop, but producing it fit for feeding twelve or fourteen days earlier; its rapid growth completely overpowering the ordinary weeds of the farm, and saving the expense both of weeding and hoeing.

The land does not require much tillage before sowing the seed, it being only necessary to make the soil fine upon the surface, previous to sowing, in order that all the seed may vegetate at once, and not lie in the ground and come up amongst other crops at a future time, which it would be very liable to do, in case the seed was buried deep by sowing upon the bare furrow in a rough state.

From twelve to sixteen pounds of seed per acre will be sufficient; if sown much thicker the plants will come small and weak, producing but little food.

The seed may be sown as early as April, for it is hardy, and a slight frost will not injure the plant whilst in the seed-leaf, and it may be sown as late as the first week in September, and produce a fair crop for feeding in November.

It is said that this crop is very obnoxious to the wireworms; it is, at all events, a good preparatory crop for Turnips; upon chalky, and other light soils, the Turnip crop generally thrives well after it, and seldom suffers loss of plant by the wireworm.

It is also a good crop to precede Wheat, for I have found (particularly upon strong soils) that abundant crops of Wheat are grown after a luxuriant crop of Mustard eaten off by sheep.

The sheep always do well upon it, particularly stock, or store sheep, it being safe and healthy, rather than

forcing and fattening; and I have found it very suitable food for ewes in lamb during any stage of pregnancy.

JOSEPH BLUNDELL.

CULTIVATION OF WINTER BEANS.

THE cultivation of winter Beans differs very materially from that of the spring Beans, and they may be grown with success upon a variety of soils, which, it is well known, cannot be advantageously cropped with the latter kind. The ordinary sorts of spring Beans require to be sown upon a clay or strong loamy soil, whereas, the winter variety will succeed and produce good crops, when the season is favourable, upon soils in general, supposing the land is in a good state of cultivation.

In selecting land for the growth of this crop, it is essential that it shall be comparatively free from couch grass, for although Beans are considered a fallow crop, yet there are few seasons when couch grass can be entirely destroyed by the hoeing usually given to the Bean crop; yet the destruction of ordinary root and summer weeds may be effected by proper application of the interculture necessary for its success.

In preparing the land, it is unnecessary to incur great expenses, one ploughing, with harrowing and rolling sufficient to produce a fine surface and firmness of subsoil, being all that is required. The best mode of planting is by the dibble, one man using two dibbles, followed by women or boys to drop the Beans two in each hole. The most expeditious and cheapest mode is to drill them; the quantity of seed required, when, dibbled, will be two bushels per acre; but when drilled a half-bushel extra.

I advocate wide drilling, with not less than two feet, or twenty-seven inches space between the drills, the full advantage of interculture may then be obtained; and winter Beans, being more inclined to stalk and branch-out than the summer varieties, they soon fill up the wide space; indeed, if drilled closer, they become so crowded as to exclude the sun and free circulation of air, which cause certain damage to the crop, and render it more susceptible to blight.

It is very important to consider how this crop is placed in the rotation; for, although it does not usually yield more profit than a crop of Oats, yet it can be more advantageously followed by a crop of Wheat. Indeed, there is no other crop so good to precede Wheat as winter Beans, for not only is the land peculiarly kind and mellow where winter Beans have been well cultivated, but being earlier to the harvest than the spring sorts, there is, in ordinary seasons, time to make a tolerable fallow after the crop is removed.

The ploughing of the land may be partly effected before the crop is carted away, by placing the produce upon every other land, or every third land, according to the bulk of the crop. The growth of Turnips, and other roots, between the rows of Beans, is advocated by some parties, but I am of opinion that it does not answer as a system. I would sooner take the advantage of a bare fallow, between the crops of Beans and Wheat; for

although I have seen very useful crops of Turnips, Rape, &c., grown amongst Beans, yet it requires great nicety of culture, and is attended with expenses which are not repaid. The rotations best suited to this crop are, 1st, Fallow, or Turnips; 2nd, Oats, or Barley; 3rd, Clover Grass; 4th, Wheat; 5th, Beans; 6th, Wheat; or Beans may be put fourth in the rotation, followed by Wheat. Land intended for Beans should always be ploughed at least a month before drilling, but for dibbling, a fresh furrow is preferable. The best time for sowing the winter Beans is from the second to the last week in October.

Farm-yard manure can be applied with much advantage to this crop; but, if the land is out of condition, and sufficient yard-dung cannot be obtained, artificial manures may be sown upon the bare furrow, and harrowed in previous to drilling; the combination of bones and guano, or the Buenos Ayres, or dried flesh-manure, with a little superphosphate of lime, is a suitable admixture. The spring management, and interculture, is a very important point in the cultivation, not only as regards the benefit to be derived by the Beans, but also by the following process which is going on during the working of the soil between the rows.

The first thing to be done, as soon as the small weeds begin to vegetate in early spring, is to horse-hoe the intervals rather shallow; and a day or two afterwards, when the weather is dry, use the harrows freely across the rows of Beans, which will not only destroy the small weeds, but will break the shell or crust of the land around the plants, and greatly facilitate their growth. The operation of horse-hoeing should be repeated as often as the small weeds vegetate, each time hoeing a little deeper, and so continuing until the plants meet across the intervals.

JOSEPH BLUNDELL.

DISEASES OF POULTRY.

LICE.

THESE troublesome pests, which, by the constant irritation they maintain, tend very greatly to prevent a healthy condition in poultry, are more frequent among Cochins than any other variety. My own birds are remarkably free from them; but I know, that in the yards of several of the most successful exhibitors they abound, in spite of every care as to cleanliness, and abundance of lime rubbish. In the cases of invalids which are sent to me, I often find them present in thousands, and I am inclined to attribute their presence in such numbers to an unhealthy condition of the system; but, whatever be the cause of their abundance, I am quite sure that they very much injure the health of the birds, and prevent their recovery when ill.

In bad cases, they may be found on looking at the base of the feathers on any part of the body; but they are always present in the largest number below the vent, and among the quill feathers of the wings. The eggs, also, may be observed clustered round the base of the feathers, so as to form a sort of sheath to the lower part of each one; and, though small, yet their number and bright crystalline appearance renders them very conspicuous. These clusters may be seen around the base of the feathers on the head, and other parts where the bird is unable to preen itself with its beak.

Feeling the importance of being able to destroy these vermin, in a manner which should be at once economical, effectual, and harmless to the fowl, I made a series of ex-

periments with different substances; the results of which I will briefly state:—

Mercurial preparations, such as white precipitate and a very dilute solution of corrosive sublimate, are effectual; but there are two insuperable objections to their use—they are very expensive when required in quantity, and are so exceedingly poisonous, that when applied to such an extensive surface as the whole body of the bird they produce serious results.

Vegetable poisons, as tobacco-water, snuff, stavesacre, &c., are open to the same objection.

Lime, in fine powder, dusted into the feathers, is only partially effectual; and the same remark applies to plaster of Paris.

The last substance I tried was flowers of sulphur. I took a Cochin pullet, just received as an in-patient, into my sanatorium, which was literally alive with lice, and dusted the powdered sulphur among the roots of the feathers over the whole body, so that every part of the skin was covered. On examination, next morning, I was most agreeably surprised to find that the whole of the vermin had emigrated; and it was only after very patient research that I succeeded in discovering a single specimen, which was by no means in a lively condition. The eggs, of course, were not destroyed; and it was necessary, therefore, to continue the application for a few days, to destroy the lice afterwards hatched.

Flowers of sulphur, or, as it is termed by the druggists, sublimed sulphur, will, I am convinced, become the remedy for this annoyance. It is perfectly harmless to the fowl, does not disfigure the plumage, is easily applied, and perfectly effectual. Moreover, it is exceedingly cheap; many pounds should be sold for a shilling; and, although I have not tried the experiment, I should think it would be equally efficacious if a quantity were added to the dusting-box of ashes, &c., that is usually kept for the use of the fowls.

I have the vanity to look upon this result with considerable complacency; feeling confident, that the remedy will be found most valuable. I have, unfortunately, a heavy counterpoise to any overweening confidence in my own researches, in the great loss that I have experienced in pursuing some investigations into the nature and cure of roup. This, however, must form the matter of another communication. I will only state, that I have ascertained, by the most carefully-conducted experiments, that roup is contagious in the highest possible degree.

W. B. TEGETMEIER, Tottenham.

CULTURE OF BRITISH ORCHISES.

I now fulfil my promise to give your readers some account of the British Orchises, and I think, perhaps, the best way will be to pass the different sorts in review, with a few words of comment upon each. There are fourteen plants which I include in the general term "Orchises," and these do not include *Orchis laxiflora*, which is, I believe, only found in Jersey. The earliest of them is

1. ORCHIS MASCULA, the "Field Orchis," as it is generally termed. The flower of this varies from pale lilac to dark purple; the stem is ordinarily thirteen, but sometimes seventeen or eighteen, inches, in height; the leaves are sometimes thickly spotted with dark purple, and sometimes perfectly green and glossy. Indeed, I think it very possible, that when botanists turn their attention more to these plants, *Orchis mascula* may be split up into two or three different varieties, one of which will be, I think, *Orchis mascula*, var. *alba*, a pure white flower, with plain leaves, which it grows more erect than *mascula* generally does. I have not seen enough of this variety to give a more lengthy description of it. *Orchis mascula* will grow anywhere. It does not require chalk, and, perhaps, a dry, elevated position, in a light soil, will suit it best. This year it bloomed about the second week in May.

2. ORCHIS MONO.—A pretty, little, purple dwarf Orchis, which grows "in moist meadows," as Sir J. Smith says; though where I have seen it growing finest was on a dry, grassy slope in the sun. This Orchis appears about a fortnight after *O. mascula*, and a very pretty, flesh-coloured variety of it may be found in most places.

3. *ORCHIS FUSCA*.—This is the most splendid of the whole tribe, but it is difficult to describe it accurately in words. It reaches two feet in height, and its dark-brown calyx, and brown-spotted corolla, together with the immense mass of flowers on the stem, combine to make it a most beautiful object. I had forgotten, too, the large, plain, broad, shining leaves, which are by no means to be overlooked. *O. fusca* loves the shade, and generally is found in a thicket of under-wood (not growing too close to keep out the sun entirely) and on a chalky soil. It has several varieties, and two of them, *O. militaris* and *O. tephrosanthos*, have been favoured with distinct names. It requires a slope.

4. *OPHRYS MUSCIFERA*.—"The Fly Orchis." This is too well known to require description. Give it a hot, dry, chalky slope, with a little thin grass growing on it. Sir J. Smith talks of 12 inches as its extreme height; but it is found in this neighbourhood about half as high again.

5. *ACERAS ANTHROPOPHORA*.—A curious-looking, yellow-flowered Orchis, which is always to be found on any chalky slope. Baxter, in his "Flowering Plants," marks it "very rare;" though what makes it so I cannot conceive. This, and the two preceding Orchises, flower at the same time as *Orchis Morio*.

6. *ORCHIS LATIFOLIA*.—A short, thick-set, purple Orchis, which grows in swampy meadows. It grows often in the same field with *Orchis maculata*, and hybridizes with it. The hybrid is taller than *O. latifolia*, has more colour than *O. maculata*, and neither has the hollow stalk of *O. latifolia*, nor the solid stem of *O. maculata*; but a solid stalk, with a little gimlet-hole through it.

7. *HABENARIA BIFOLIA*.—Plain, broad leaves; flower white, and erect; the stem apparently very stiff, as the flower of the old year frequently remains standing till the bulb of the new year has grown to some height. It has a smaller variety, found on heaths, and called *H. chlorantha*. It appears to grow anywhere, as Captain Inglefield, the Arctic voyager, found it blooming in the Polar regions!

Having now described half the Orchises, I must not trespass on your space any longer, as I am afraid that I have already exceeded the bounds.—W. P.

[We should readily have given up double the space. You will oblige many readers by giving any information about the best time of transplanting and treating each species.—ED. C. G.]

THE GAPES.

I HAVE read with interest the different modes of treatment detailed in THE COTTAGE GARDENER for the cure of chickens attacked with this "pest of the poultry-yard."

The plan adopted by your correspondent, Mr. Lort, is good, but the patient must be operated upon with great care, for the delicate formation of the windpipe renders it difficult to insert a feather into that organ without injuring it; unless performed by an experienced hand, the attempted cure proves as bad as the disease.

In a recent number (248), Mr. Tegetmeier states, that "the old plan was to nearly suffocate the chickens with tobacco; but this was only partially successful." Now I feel unwilling to doubt such an authority as Mr. T., and, had I not proved the efficacy of tobacco-smoke as a cure for the gapes, should have at once coincided with him. The old plan alluded to, was, I judge, to confine the chicken in a box with burning tobacco, causing it to inhale the vapour. This modo might have been only partially successful; but, if properly administered, it is *equally successful* as turpentine, either applied with a feather, or inhaled by the patient. The following plan I can recommend to the readers of THE COTTAGE GARDENER, judging that many of them are not averse to the smoke of that fragrant weed, *Nicotiana tabacum*; even if they should be, the gardener, or poultry attendant, will require but slight persuasion to aid, fitted by the experience he has gained in this fashionable accomplishment. Let a pipe be prepared as usual for smoking; when lighted, take the chicken, and holding the mouth open let a current of smoke be blown into it and the nostrils; after being repeated three or four times in quick succession, the chick will become insensible, and show but

slight signs of life; it will, however, after the lapse of a few minutes, recover, and will rarely require to be fumigated a second time.—H. L.

EXPERIMENTS IN POTATO PLANTING.

I PROMISED to send you the result of my experiments in Potato planting. I divided a piece of ground into three equal parts; in the first, the Potatoes were planted in rows a yard apart, and about nine inches from set to set; in the second, the same distance from row to row, but single sets, a yard apart in the row; in the third, with four sets in a clump, a yard apart from centre to centre of the clumps; all were covered with burnt earth. On taking them up, I find that those planted in the last manner are much superior to the others, in size and quantity, being, at least, in the proportion of five to four.

They are all remarkably free from disease, considering the season. All the other Potatoes which I have dug, and which were covered with burnt earth, from weeds and rubbish, are also a very fair crop, considering, as I have said, the season.

And now, Sir, when every one is trying to find out a remedy against this disease, allow me to suggest an idea which has struck me, and on which I should wish for your opinion. I see it stated in your Magazine, that it is now generally considered that the disease arises from a fungus attached to the potato; and, I have thought, that if we were to dip our potatoes in some pickle before planting, just as we do for wheat, it would be a good plan. I should recommend the following:—Have a cask of brine with strength enough to float an egg, in this let the potatoes be dipped for a certain time, and when planted, covered with superphosphate of lime. Now, if you see nothing to object to in this plan, nothing that is at all likely to do injury, I shall adopt it if I plant potatoes again.

Pray let me know your opinion on the subject.

CLERICUS R.

[We believe the experiment of putting the sets into a brine before planting has been tried unsuccessfully—but this need not discourage others from repeating the experiment. We are not sanguine in hoping that it may be beneficial, because if it be admitted that the murrain is caused by a fungus, still the spores of that fungus may be in the soil, just as a similar parasite is thence communicated to wheat.

Our own observations, and the facts communicated to us, all agree in favouring the opinion that the potato murrain appears with a new phase this year. We mean, that although the haulm decayed earlier, and more virulently than it did even in the worst of former years, yet the tubers have not decayed in the same proportion. This, probably, arose from early-ripening varieties having their tubers advanced to a stage of ripeness that is safe from the infection.—ED. C. G.]

MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.

THE second annual exhibition of poultry, connected with this Society, was held at Warrington, September 7th, and from the crowded state of the tent in which the pens were arranged, it was evident how great was the interest which the poultry excited.

A convenient tent was pitched in a field close to the Railway Station, and great praise is due to the Secretary for the manner in which the poultry were there arranged. Would that we could add more, but here, we regret to say, our encomiums must end.

Nothing could be worse than the manner in which the proceedings, as far as the judging was concerned, were carried out. Had the regulation been adhered to, which decided that all stock should be in the yard by eight o'clock, the judges might have proceeded at once to their duties, and by ten o'clock, at which hour the public was admitted, the prizes would all have been apportioned; instead of which, at half-past twelve, in a crowded tent, the judges were still occupied. This, of course, gave room for dissatisfaction

and comment, more especially, as before judgment was pronounced everybody who chose to try was in possession of a catalogue.

We would recommend greater punctuality, and more attention to these matters, in next year's show, and would suggest, whether such a Society as the Manchester and Liverpool, holding its meetings in a country so wealthy, and where the love of poultry so strongly exists, might not well afford to offer better prizes than a paltry sum of 10s. for the best pair of chickens, as well as generally to enlarge their prize list. That the offer of poultry prizes has already done good, is evident from the great improvement in the poultry shown now, compared with what was exhibited in 1852.

The prizes in the classes for adult *Dorkings* and *Spanish*, fell, as usual, to Capt. Hornby. The former, as a class, were remarkably good, worthy even of London or Birmingham. The latter were badly represented, except by the winning birds. Of the *Shanghaes* we cannot speak with praise, nor, indeed, of the *Hamburgs*, with the exception of the Silver-laced, which class was well represented.

The same may generally be said of the *Geese* and *Ducks*, old and young. The geese exhibited by Mrs. Townley Parker possessed great merit.

The young poultry were good, but especially the *Cochin-China* chickens.

In the extra stock we observed some very good *Black Bantams* belonging to Mr. Gilbert Moss, which we think we saw in December, at Birmingham; and for premium 73, a very good pen of *Silver-laced Bantams*, belonging to Capt. Hornby, to whom was also awarded the Society's Medal for "the best pen of poultry exhibited."

The judges were Mr. Machin, of Trentham, and Mr. Green, of Longton, Staffordshire.

Premium 64.—Seven claimants. For the best white, speckled, or grey *Dorking*, Captain W. W. Hornby, Knowsley Cottage, near Prescot.

Premium 65.—Three claimants. For the best *Spanish*, Captain W. W. Hornby, Knowsley Cottage, near Prescot.

Premium 66.—Five claimants. For the best *Game Fowl*, Mr. E. Alison, jun., Park Hall, near Chorley.

Premium 67.—Five claimants. For the best *Cochin-China*, Mr. T. Leigh, Golborne Park, Newton, near Warrington.

Premium 68.—Two claimants. For the best *Golden-pencilled Hamburg*, Capt. W. W. Hornby, Knowsley Cottage, near Prescot.

Premium 69.—Five claimants. For the best *Silver-pencilled Hamburg*, Mr. J. Taylor, Halshaw Moor, Kearsley, near Bolton.

Premium 70.—Four claimants. For the best *Gold-spangled Hamburg*, Mr. G. Fell, Warrington.

Premium 72.—Two claimants. For the best *Poland*, Capt. W. W. Hornby, Knowsley Cottage, near Prescot.

Premium 73.—Three claimants. For the best of *any other breed or cross*, Capt. W. W. Hornby, Knowsley Cottage, near Prescot.

GEESE.

Premium 74.—Three claimants. For the best *Geese*, Mr. T. T. Parker, Astley Hall, Chorley.

DUCKS.

Premium 75.—Five claimants. For the best *Aylesbury*, Mr. H. Worrall, Knotty-ash House, near Liverpool.

Premium 76.—Three claimants. For the best *Rouen*, Mr. H. Worrall, Knotty-ash House, Liverpool.

Premium 77.—Five claimants. For the best of *any other variety*, Mr. H. Worrall, Knotty-ash House, near Liverpool.

TURKEYS.

Premium 78.—Two claimants. For the best *Turkeys*, Mr. E. W. Wilmot, Hulme, Walfield, near Congleton.

YOUNG POULTRY.

Premium 79.—Four claimants. For the best four *Goslings*, Mrs. T. T. Parker, Astley Hall, Chorley.

Premium 80.—Five claimants. For the best four *Ducklings*, Mr. H. Worrall, Knotty-ash House, near Liverpool.

Premium 81.—Eleven claimants. For the best four *Chickens* (one cockerel and three pullets), of the *Dorking* breed, Mr. E. Lister, Cassin Lodge, Over.

Premium 82.—Four claimants. For the best four chickens (one cockerel and three pullets) of the *Spanish* breed, Captain W. W. Hornby, Knowsley Cottage, near Prescot.

Premium 83.—Seventeen claimants. For the best four chickens (one cockerel and three pullets) of the *Cochin-China* breed, Captain W. W. Hornby, Knowsley Cottage, near Prescot.

Premium 84.—Five claimants. For the best four chickens (one cockerel and three pullets) of the *Bolton Grey* breed, Mr. E. Alison, jun., (right to prize disputed,) Park Hall, near Chorley.

Premium 85.—For the best pen of poultry in the show, the Society's Silver Medal, Capt. Hornby.

A PLEA FOR HERBACEOUS PLANTS.

I OBSERVED, in THE COTTAGE GARDENER, a few weeks since, some remarks, by Mr. Appleby, upon the grounds and gardens of Mrs. Bentley, of Wooddlesford House (Esholt House), which place I laid out some years ago. One point, in particular, in his remarks, reminds me of what I have long thought an error, and one which, in my opinion, is becoming far too fashionable—I mean the "bedding-out system." I quite agree with the high eulogium which Mr. Appleby has passed upon the display of certain beds of flowers in these grounds, for which great credit is due to Mr. Pearson, the flower-gardener. These, I have more than once, taken occasion to compliment him upon; and, therefore, I do not wish it to be understood that I disapprove of the "bedding-out," or group system; for, to a certain extent, I quite approve of it, and think the introduction of masses and groups of *Geraniums*, monthly or other perpetual *Roses*, *Petunias*, &c., &c., here and there, in a flower-garden, indispensable for producing a breadth of bright colour, and giving force and variety to the scene; but what I am anxious to caution the floricultural world against, is, the encouragement of the bedding system to the almost total exclusion of herbaceous or border-flowers. It is a lamentable fact, that numbers of our most lovely and beautiful border-flowers are neglected, though such flowers would well bear inspection, and produce both interest and admiration at every step, were they more freely and properly introduced.

Now, having had opportunities of knowing Mr. Appleby's good taste and general knowledge, not only in tropical, but also in herbaceous plants, I am induced to hope he will take the subject up, and try to produce, or rather revive, a taste for the cultivation of hardy flowers of general interest, by giving us a paper, now and then, on their management, with the names of a few of the most pleasing kinds, in THE COTTAGE GARDENER, and thus be a means of preventing the dress of our flower-gardens from being confined to a few dozens of showy varieties of flowers, to the total omission of others of equal interest, and with even stronger claims to our admiration.—JOSHUA MAJOR, *Knoshtorpe, near Leeds*.

GREY SHANGHAES.

IN Mr. Jones's reply to my letter, the material facts are not questioned, but he states, Mr. Griggs "sold" the grey cock to Turner, at a fair price, and he was not given in exchange for his services. In my letter to you, I simply expressed a belief on this subject; and, as the price was so small, it was scarcely worth while to disturb the position I had assigned to Mr. Griggs; for, if a gentleman had allowed so poor a man to work, or took his roots and flowers in return for the bird, instead of receiving so small a sum in money, I take it, the matter would have stood no less favourably, as Turner was a labouring gardener, with a wife, and six little children.

All the lots enumerated by Mr. Jones, as being sold by Mr. Stevens, at prices varying from 10s. to 14s., were not so. As he is so regular an attendant at the sale-room, he cannot surely have failed to observe, that all the lots are supposed to be knocked down at some price; but he should remember, that in many cases (as in those alluded to) an imaginary bidding only, emanating with the auctioneer, or a friend of the seller, is made without any *bona-fide* offer at all. The 10s., then, must have been the reserved price; and, after deducting expenses, if they actually were sold, the clear residue for the owner of the birds, could not have exceeded 7s. 6d. each.

If the *Brahma Poutras*, instead of being the extraordinary new American breed, so much vaunted as possessing such rare merits, are allowed by their owners to be no more than *Grey Shanghaes*, no one does, or ever will, dispute it. I simply addressed those few remarks to you, to shew that they were not only not a new and distinct bird as averred, but, in fact, not even a novelty; and that the colour, on which a main argument rested in favour of their being a new breed, was obtained as pure and distinct out of buff, or other coloured parents, as from grey. It is worse than idle to pretend that they possess merits to which they are not en-

titled, and cannot be shown to have; and being a pernicious system of exaggeration, in common fairness to the readers of THE COTTAGE GARDENER, it should be exposed.

Mr. Stainton, and others, used to say of these Grey Shanghaes, years ago, that they were fine birds, but a bad colour; and largo birds, but the colour against them; and yet we are now to believe it is a new breed just imported from America!—C. H. B.

GOLDEN DROP WHEAT.

IN THE COTTAGE GARDENER, about twelve months ago, you recommended the "Golden Drop" variety as the best kind of wheat, and I have tried it in the same field this year, side-by-side with the "White Cheddham." The seed for both was procured for me by a respectable tradesman, and I am satisfied it was good and genuine.

The "Golden Drop" has produced a much heavier crop than the "White Cheddham," which has not corned well; indeed, there are many failing and defective corns in every ear. Both were sown early in November.

I shall grow the "Golden Drop" again; but as the bread from it is of a dark colour, and the "White Cheddham" seems to be a tender variety, I shall be greatly obliged by your recommending a hardy white wheat for sowing the last week in October, or the first week in November. My ground is situated within one-and-a-half-mile of the sea, but sheltered from its winds; the soil, a light loam; the subsoil, in some parts of the same field, sand; and, in others, gravel; but the upper soil has a tolerably good depth, say twelve or fourteen inches. It does not require draining.

SYONICA.

SOME MINOR POULTRY SHOWS.

NORTH LANCASHIRE AGRICULTURAL SOCIETY.—The show of this Society took place at Blackburn, on the 26th of August.

Class 7.—POULTRY.—Hatched previous to 1853.

- Best white, speckled, or grey *Dorking* (single comb), William Ellison, junior, Low Sizergh, Kendal.
- Best white, speckled, or grey *Dorking* (double comb), Captain Wyndham Hornby, Knowsley Cottage.
- Best *Spanish*, Captain Wyndham Hornby, Knowsley Cottage.
- Best *Game*, Captain Wyndham Hornby, Knowsley Cottage.
- Best *Cochin-China*, William Wanklyn, jun., Bury.
- Best *Silver-pencilled Hamburg*, Daniel Parsons, Cuerden.
- Best *Golden-spangled Hamburg*, Jonathan Hague, Lower Darwen.
- Best *Silver-spangled Hamburg*, Frederick Townley Parker, Astley Hall.
- Best *Poland*, William Binder, Whalley.
- Best *Bantams*, Captain Windham Hornby, Knowsley Cottage.

GEESE.

- Best *Geese*, Mrs. T. Townley Parker, Astley Hall.

DUCKS.

- Best *Aylesbury*, Thomas Leigh, Blackburn.
- Best *Rouen*, Thomas Leigh, Blackburn.
- Best of any other variety, Frederick Townley Parker, Astley Hall.

TURKEYS.

- Best *Turkeys*, Joseph Feilden, Witton Park.

YOUNG POULTRY.—Hatched in 1853.

- Best three *Goslings*, Mrs. T. Townley Parker, Astley Hall.
- Best six *Aylesbury Ducklings*, Captain Wyndham Hornby, Knowsley Cottage. Those shown by the Rev. John Kitton, of Hutton, were highly commended.
- Best six *Rouen Ducklings*, Edward Alison, jun., Park Hall, Chorley.
- Best six *Ducklings of any other variety*, William Henry Hornby, Blackburn.
- Best six *Dorking Chickens* (single comb), Daniel Parsons, Cuerden.
- Best six *Dorking Chickens* (double comb), Daniel Parsons, Cuerden.
- Best six *Spanish Chickens*, John Ambler, Preston.
- Best six *Game Chickens*, Edward Alison, jun., Park Hall, Chorley.
- Best six *Cochin-China Chickens*, Capt. Wyndham Hornby, Knowsley Cottage. Those shown by the Rev. J. Kitton, Hutton, were commended by the judges; and those shown by Michael Carter, of Preston, were highly commended.
- Best six *Chickens of any other variety*, Edward Alison, jun., Park Hall.

BADGER POULTRY SHOW.—Badger is the seat of Robert Cheney, Esq., near Bridgenorth, and the show took place on the 25th of August.

It was held in two tents, one appropriated exclusively to amateur's stock, the other to fowls exhibited by cottagers;

whilst in two other tents the Floral Society exhibited the results of their labours.

It was, undoubtedly, a very creditable exhibition for a "first attempt;" and though no money prizes whatever were awarded to amateurs (the credit of winning a first, a second, or third prize, being the only inducement held out to contributors), the entries thus obtained were upwards of 160 pens; some having been forwarded from distant localities. Although the day was the very reverse of propitious (for it rained incessantly, and in torrents), many hundreds of visitors attended, amongst whom were not a few ladies. The birds were exhibited in baskets, as at Cheltenham; and a rather singular feature of this show was the total absence of diseased specimens.

The most successful exhibitors were Mr. Thos. Smith, of Stapleford, and Edward Wm. Haslewood, Esq., of Bridgenorth, as between them they took sixteen prizes and two commendations. In the old *Cochin* classes (as the season of the year naturally predisposes), the worst of plumage was "the order of the day;" not so in *Cochin* chicks. In this class (2) there have rarely been exhibited a more meritorious assemblage of competing pens. The first prize (pen 14, belonging to Wm. Latham, Esq., of Sandbach, Cheshire,) soon changed ownership, as did several other pens in this class. Where so much real merit exists, it would be invidious to particularise. The whole class would have done credit to any exhibition. A pen of *Silver Poland* chicks (pen 7, prize first, class 13) were soon purchased, and were certainly one of the most promising lots in the whole show; if all goes on well, they will prove themselves dangerous competitors at some of our largest shows. The *Bantams*, as a whole, were evidently a very neglected variety.

In the extra class (pen 7, *Malays*), were of the very best birds of their class; whilst the *Egyptian* and *Canadian Geese*, belonging to Robert Cheney, Esq. (the owner of the grounds on which the show was held), were exhibited in the most creditable condition. In the *Ducks*, the *Aylesbury* carried away all the laurels, the other varieties being very indifferently represented.

The most interesting, and, perhaps, the best contested part of the exhibition, was in the "cottagers' tent;" here the display of "*Hamburgs*, of any variety," much excelled the general run of exhibitions; the first, second, and third prizes, in class 20 (section 1), and again the third and fourth pens, in class 20 (section 2), and I must add, the *Golden-spangled Hamburg*, in pen 2, cottagers' extra stock, and which obtained the pair of *Cochin* chicks, for "best cock of any variety shown," would have proved no disgrace to a Birmingham or a Metropolitan exhibition.

The gift of live fancy poultry to cottagers, for prizes, seems a step in the right direction, and will, no doubt, eventually prove most beneficial to the lucky competitors; whilst the birds shown on this occasion by them prove, distinctly, that a cottager can breed, and compete, too, in poultry lists, with his more favoured employer, and will stimulate the labouring class to still greater exertions.

It would be well were the like class of prizes offered at our fully-established poultry exhibitions, and would prevent many a labourer from wasting his time and wages in the degrading haunts of a pot-house kitchen.

WETHERBY POULTRY SHOW.—This show (Sept. 9th) was considered superior to that of former years. The buff and white *Cochins* were very much admired. The *Dorking* and *Spanish* classes were much in advance of last year.

JUDGES.—Jonathan Pickard, Bardsey; W. S. Gill, Boston Spa; and T. T. Tipling, Boston Spa.

- Best two *Geese* and *Gander*, to J. Tomlinson, Cowthorpe, Wetherby; second, to Thomas Dunwell, Burnbridge, Harrogate.
- Best two *Ducks* and *Drake*, to John Burniston, Follifoot, Wetherby; second, to Thomas Dunwell, Burnbridge, Harrogate.
- Best three *Ducklings*, to David Hume, Marton, Middlesborough.
- Best two *Turkey* hens and cock, to Hon. Albert Stourton, Allerton Hall.
- Best three young *Turkeys*, to Thomas Groves, Plompton Hall.
- Best two *Dorking* hens and cock, to T. B. Stead, Leeds; second, to John Whineup, Walshford.
- Best two *Malay* hens and cock, to Thomas Cartledge, Knaresborough; second, to David Hume, Marton, Middlesborough.
- Best two *Spanish* hens and cock, to J. H. Smith, Skelton Grange, York; second, to Hon. A. Stourton, Allerton Hall.
- Best two *Cochin-China* hens and cock, to T. B. Stead, Leeds; second, to J. H. Smith, Skelton Grange, York.

Best two *white Cochín-China* hens and cock, to John Noble, Boston Spa; second, to John Noble, Boston Spa.
 Best two *Silver Pheasant* hens and cock, to William Pitts, Wetherby; second, to Thomas Lofthouse, Wetherby.
 Best two *Chitteprat* hens and cock, to J. Thompson, Wetherby.
 Best two *Golden Pheasant Bantam* hens and cock, to John Thomas Tipling, Boston Spa; second, to the Hon. A. Stourton, Allerton Hall.
 Best two *white Bantam* hens and cock, to Hon. A. Stourton, Allerton Hall; second, to David Hume, Marton, Middlesborough.
 Best two *black Bantam* hens and cock, to Thomas Cartledge, Knaresborough.
 Best two hens and cock of *any breed* not before mentioned, to John Jaques, Knaresborough; second, to — Watson, Knaresborough.
 Best three *young Bantams*, to Thomas Cartledge, Knaresborough.
 Best three young fowls of the *Dorking* breed, to T. B. Stead, Leeds.
 Best three young fowls of the *Spanish* breed, to T. B. Stead, Leeds.
 Best three young fowls of the *Cochín-China* breed, to Benjamin Blaydes Thompson, jun., Tadcaster; awarded to Mrs Saynor, Wetherby.
 Best three fowls of *any other breed*, to George Lane Fox, Bowcliffe House; awarded to James Beaumont, Wetherby.

BURY AND RADCLIFFE AGRICULTURAL SHOW.—This was on September 9th. The poultry portion was very good collectively. The *Spanish* fowls were excellent, as were the *Shanghai chickens* and *Geese*. The judges were Mr. Bissell, of Birmingham, and Mr. Nutt, of London. They awarded Capt. Hornby the Society's Silver Medal for the best pen of fowls exhibited.

SPANISH.—Best cock and three hens, chickens of 1853, Captain W. Hornby, Knowsley. Second best, Mr. Peter Eden, Salford. Best cock and two hens of any age, Captain Hornby.

DORKING.—Best cock and three hens, chickens of 1853, Captain Hornby. Second best, Michael Potter, Esq., Prestwich. Best cock and two hens of any age, Captain Hornby.

COCHIN-CHINA (Cinnamon or Buff).—Best cock and three hens, chickens of 1853, Captain Hornby. Second best, C. Rawson, Esq., The Hurst, Walton-on-Thames. Best cock and two hens of any age, Mr. William Wanklyn, jun., Bury. Best cock and two hens of any age, Mr. Charles L. Clare, and Mr. William Wanklyn. (Black or White). Best cock and three hens, chickens of 1853, C. Rawson, Esq., Walton-on-Thames. Second best, Mr. Wm. Wanklyn.

GAME.—Second best cock and three hens, chickens of 1853, Mr. James Fletcher, Ringley. Best cock and two hens of any age, Mrs. Wyndham Hornby, Knowsley.

GOLDEN HAMBURGH.—Best cock and three hens, chickens of 1853, Mr. R. E. Ashton, Ramsbottom. Second best, Mr. James Fletcher, Ringley. Best cock and two hens of any age, Captain Hornby.

SILVER HAMBURGH.—Best cock and three hens, chickens of 1853, Mr. D. Leeming, Halifax. Second best, Mr. J. Taylor, Kearsley. Best cock and two hens of any age, Mrs. D. Henderson, Shuttleworth.

POLAND.—Best cock and three hens, chickens of 1853, Mr. James Fletcher, Ringley. Best cock and two hens of any age, Mr. C. Rawson.

BANTAMS.—Second best cock and three hens, chickens of 1853, Mrs. Wyndham Hornby. Best cock and two hens of any age, Mr. C. Rawson.

TURKEYS.—Best cock and two hens of any age, Mr. John R. Farnworth, Alderley Edge, Cheshire.

GEES.—Best gander and two geese of any age, Mr. C. Rawson. Second best ditto, Mrs. Wm. Ashton, Oaklands.

DUCKS.—Best drake and two ducks, of any age, Mr. D. Leeming. Second best ditto, Mrs. Mally Partington, Whittle. Best hatch of ducklings, not less than four, Mr. J. R. Kay. (Rouen and other dark variety).—Best drake and two ducks, of any age, Mr. Thomas Statter. Second best ditto, Mrs. D. Henderson, Shuttleworth. Best hatch of ducklings, not less than four, Mrs. Henderson.

GLEANINGS

JUSSIEU.—The last of the illustrious Botanists of this name is gone from us, and gardeners owe so much both to him and his ancestors that we must honour their memory with the eulogium delivered at this last of their funerals, by M. A. Brongniart. We copy it from the *Gardeners' Journal*:—"Gentlemen: A few months only have elapsed, when I have again the mournful duty of expressing here our deep sorrow over the tomb of one of our colleagues. Within less than a year, Richard and Jussieu—friends from their youth—have died, both at an age when science might have hoped from them for more important labours, and friendship a long succession of happy days. *Adrien de Jussieu*, the worthy heir of this illustrious name in science, has fallen at the age of fifty-five, in all the vigour of his powers, when the accumulated researches of many years, and the maturity of his judgment, encouraged the hope that he would still contribute, by his excellent memoirs, to the progress of science. It is not in these mournful circumstances, when our feelings are so deeply affected, that I would expound to you the value of labours long since appreciated by the learned world. A few words on the simple but well filled up life of our colleague will announce our grief and regret to the world.

The only son of Antoine-Laurent de Jussieu, delicate in his health from childhood, his education was shared between his father's house and the public school. He had brilliant

success in his literary studies, which was rewarded by the prize of honour of the *Concours generale*. His taste inclined him rather towards literature than science; but having—in obedience to the wishes of his father, and to render himself worthy the name he bore—commenced the study of medicine, the most solid basis of the natural sciences, his active and diligent mind readily perceived their interest; and ere long, it was not from duty, but from taste, that he devoted himself especially to the study of botany. The first publication of the young botanist was an excellent memoir on the family of *Euphorbiaceae*, which he gave as a medical thesis, and in which his observant mind and clear judgment were already remarkable, and announced a worthy successor to the name of Jussieu. It showed, especially, that while inheriting the principles which constituted the glory of the French school of botany at the close of the eighteenth century, he knew how to enlarge the field in conformity with the progress of the science. His memoirs on the *Rutaceae*, *Meliaceae*, and *Malpighiaceae*, showed the successive development of his mind, which was at once sagacious and profound. The last of these, especially, a considerable work, and the result of long researches, may be cited as a perfect monograph of a vast family. In it nothing is passed over; the anatomy of the different organs of the stems and leaves, as well as of the flowers and fruit, is treated with a care not often found in works of this nature; and, along with this, the task of classifying the genera and species is performed with that precision and judicious criticism which form one of the chief merits of works of this description. It is seen, that by Adrien Jussieu descriptive botany was not confined to generic and specific distinctions, but became a veritable anatomical, and often physiological study, the only real basis of the natural method. He fixed his attention especially on the examination of the most important organs, and the vegetable embryo in particular became the object of his studies. In a first memoir, published in 1839, on that of the Monocotyledons, he announced others in which he proposed to search deeply into this important subject. Since then, numerous researches have enriched his portfolios, and much was ready for publication; but, as with all minds ardent for truth, he found his results yet incomplete, while his enfeebled health did not permit him to continue the minute microscopical studies necessary for such a subject. Let us hope that friendly hands will not allow these precious documents to perish. In 1826 he was called, in the lifetime of his father, to succeed him at the Museum of Natural History in that chair, the inheritance of his father and great-uncles, where, under a simple style and in familiar conversations, he knew so well how to give impulse to, and direct for the best, the studies of young naturalists. In 1831, his father had the happiness to see him sit by his side in the Academy, in that same botanical section where Antoine and Bernard de Jussieu had preceded him. Finally, after having long assisted M. Auguste Saint-Hilaire at the Faculty of Sciences, he was nominated professor in 1850. The regular teaching of botany led him to the publication of an elementary botanical work, a *resumé* of his lessons, which in a small volume contains the essence of the science, and in which the superior mind is easily recognised by the manner in which questions, the most difficult and profound, are treated with clearness and precision. Such was the scientific life of Adrien de Jussieu. The administrative direction of the Museum of Natural History, to which he was called many times, could alone divert him from his studies. But the affection—it might be termed filial and hereditary—which he had for this establishment (the theatre of the labours of his father and uncles, and in which he had been brought up) could only attach him to his habits of calm and regular work. His early taste for the *belles lettres*, which he had extended to foreign literature, occupied his leisure. Tours with friends, to whom his character and disposition doubled the enjoyment of these excursions, were his principal relaxation. The improvement of his rich library was his only passion. His taste and habits, which we have just mentioned, will suffice to enable those who were acquainted with him to appreciate his character. Full of kindness, benevolence, amiability, and good nature in the ordinary affairs of life, his character displayed all its firmness in the most important questions; and his amiability never led him to the indulgence or approbation of what he considered wrong.

Such a character, such simple habits of life, a warmly attached family, his mother, his sisters, his two daughters, especially the objects of his affection, would have rendered him perfectly happy if his health had not made his work difficult, and often almost impossible. Yet such was his attachment to his duties, that last spring—when already affected by the malady to which he at length succumbed—he commenced his lectures and demonstration, which he only suspended when his bodily strength completely failed. His death leaves an immense void in science and in the establishments with which he was connected. With him is extinct the illustrious name of Jussieu, which during three generations has been the glory of the Academy and the Jardin des Plantes. The heavy burden of a name borne by Bernard and Antoine-Laurent de Jussieu, Adrien sustained without flinching—he even gave to the name an additional splendour; and it is when the Academy of Sciences had called him to the honour of presiding over it, that we have lost at the same time a colleague, beloved by all, and the president who in a few days hence would have directed our deliberations. In addition to the regret which will be felt by scientific men of all countries, there is in our case—and especially in his who is here the exponent of your sentiments—the bitter sorrow of the heart. No man was more worthy to be loved—no one more devoted and constant in friendship—no one who will inspire attachment more deep and lasting, and excite more regret among those who knew him intimately, and who here join with me to bid him a last adieu."

ARTIFICIAL PROPAGATION OF SALMON.—A meeting of the salmon fishing proprietors in the River Tay was held on Friday last, at Perth, for the purpose of considering the question of the artificial propagation of salmon. The chief speaker was Mr. Thomas Ashworth, from Ireland, who stated that his brother and he have, at the present time, about 20,000 young salmon in ponds, produced by artificial means, which are daily fed with suitable food. His brother and himself having purchased the Galway salmon fishery, in Ireland, they determined to try an experiment there for the artificial propagation of salmon. A suitable place having been fixed upon at Outerard, operations were commenced between the 20th of December and the 1st of January last, which was about a month too late, yet boxes were prepared in which the spawn of the salmon were deposited. These boxes were about 18 inches square, and 6 feet in length, with a zinc grating in the sluice at either end. There were 20 boxes in all, which were filled with gravel or small stones to the depth of six inches. To procure the ova and milt of the female and male salmon, the fish were taken by small nets on the spawn fords at night, and instantly and without injury put into a tub one fourth full of water. The female fish was first turned on her back, one man holding the tail, and another running his hands down each side from the head, and pressing lightly with his thumbs, the ova was readily discharged into the tub; a similar course readily discharged the milt. About 370 salmon were treated in the above manner, and again returned to the river. Mr. Ashworth explained how the ova and milt were mixed in the tub, and then taken out of it with a cup and deposited in the boxes, when it was covered with additional gravel. There were at present about 20,000 young salmon alive, and thriving in these ponds, from two inches to three inches in length. The fine zinc gratings were used to prevent both trout and insects from getting into the ponds, as they were very destructive to the salmon-fry. The ponds were about 20 yards in length, and 12 to 13 yards in breadth, and it was intended to keep the young salmon in them for 10 months, when they will have grown to about four inches in length. They would then be able to take care of themselves on their way to the sea. He stated, also, that it was indispensable the young salmon should be fed daily with chopped flesh meat. The current of water running through the boxes must be pure and free from mud, and great care was required to be taken during the periods of incubation, when the rivers were flooded by heavy rains, to divert the muddy water from the boxes. It took about 100 days until the spawn gave indication of life. The expense of this plan of artificial propagation he did not estimate to exceed a pound a thousand, which was at the rate of one farthing for each salmon. After some discussion it was resolved that the experiment should

be tried in the Tay; and a committee was appointed to adopt the requisite measures.—*Edinburgh Courier.*

TO CORRESPONDENTS.

ROSE CUTTINGS (*J. R.*).—These will give least trouble under hand-glasses. They may be put in now.

GERANIUM CUTTINGS (*Ibid.*).—You made your cuttings too small—two or three joints would have been better; and, if we understand the case, the wood was too spongy. See what Mr. Fish said the other week.

SOILS, &c. (*Margaret*).—Your loam is a light-coloured clayey loam. See part of Mr. Fish's article to-day. Gas-line must be used with very great caution; we would not advise you to have anything to do with it. It would be a capital thing to place at the bottom of walks. Fruit trees will do well in the ground mentioned. The deep trenching and the new soil gave strength to the *Fuchsias*. Cut down after frost; they will, probably, do better next year. The *Tropæolum* bulb had not been old enough; let it alone until the foliage is quite yellow; then leave it dry in the pot, or take it out, and place in dry earth, free from frost, and report next spring, as soon as the growth commences. When growing, and after May, you must give it air in your window. The Lemon Verbena (*Aloysia citriodora*) is easily propagated from cuttings in spring, and as easily kept in a window. We saw two huge bushes yesterday, at the side of a gardener's door. They are cut down every autumn, like a *Fuchsia*, and protected with ashes and a mat during winter.

NIGHT-SCENTED STOCK (*Ibid.*).—Take cuttings also in spring, so that young plants are established before winter. Nothing will make the plant look beautiful; its scent, at night, from its dull-looking flowers is the great charm. It must have little water in winter, and the cuttings in spring should not have a damp place, unless there is artificial dry heat to drive it off.

TANK FOR HEATING GREENHOUSE (*J. B. C.*).—This house is 20 feet long, 12 feet wide, and 9 feet high at back, and 5 feet in front. The position, of course, must be beneath your stage; but your plan will only be effectual for plunging pots above the tank, to secure bottom-heat, by having all the plants on the stage supplied with saucers. Even then, of course, you could have no bottom-heat of any consequence, unless in very cold weather. You may make the tank as long and as wide as convenient—say 14 feet by 6 feet, and four inches deep. Well-managed, you would find it useful; the plunging material above the tank being used chiefly for propagating purposes.

ROSE-BUDS NOT STARTED, BUT ALIVE (*Flora*).—Do not stop the shoots now, that might start them into growth, to be killed by the frost. Cut back when they have grown a little next spring. It is usual to pinch the point of a shoot that has a bud inserted at its base, to cut it back farther when it is growing, but not to cut to the bud until it has gained some strength. This on principle, but frequently we have had a shoot broken off near a strong bud, and it immediately went off at railroad pace, with all the sap that went to the shoot appropriated. In your case, we would cut back nearly to the inserted bud when growth was proceeding in spring.

BANANA—THINNING FRUIT (*Blythina*).—We should think there would be no danger, if the plant was rather dry, but we have not had much practice.

CHERRY-TREES AND PEAR-TREES (*J. B. B.*).—These bloom freely, but do not fruit, though Apple-trees do well near them. Are you near the smoke of a town? that will account for it, as the soot clogs the parts of fructification. Does your grass lawn slope at all; or does it allow enough of water to get to the roots while the trees are in bloom? They seem to be dry enough, and near the surface enough, when they bloom so freely. If you think none of these are the reason, brush the blossoms next season with a feather, or a camel's-hair brush.

VINERIES, &c. (*Ibid.*).—Better "let well alone." Either in a pit, or on the floor, in such a house, with Vines up the rafters merely, good gardeners will grow Peaches, Vines, Oranges, Cucumbers, and Melons, in pots or boxes, provided there is heat for the two latter; but recollect, that attention to Peaches, Figs, &c., will interfere with what the Vine requires. We know many instances of gardeners obtaining a wonderful amount out of such houses, but then quality has in some, if not all, the things, to be sacrificed to quantity. For Cucumbers, a little bottom-heat would be desirable. *Rhubarb* can be grown anywhere in winter and spring, where you can command a temperature of from 50° to 60°. We have grown that and *Sea-kale* on the bottom of an early Vinery, keeping the *Kale* from the light. Of course, the well-matured roots were brought from the open air, and taken out when done with. You will do no good with permanent plants in such a house unless they have unobstructed light.

PILLAR ROSES—FIFTEEN OR SIXTEEN FEET HIGH (*M. S.*).—See the description, and consult the section of that kind of Roses in a nurseryman's catalogue. You cannot expect such things in a day. The ground must be deeply trenched; consist of good mellow loam, well drained, with abundance of dung and manure waterings; and proceed just as if you wished a symmetrical bush a yard high, and eighteen inches in diameter. The pruning must regulate the shape; and, provided soil and manurings are suitable, time will produce the desired result. Of course, you are aware that when one shoot is selected for a leader, and other subordinates to stand round it, the lower shoots must be trained nearly horizontally, to give the greatest width at the base line.

GERANIUMS FOR BOX OUTSIDE THE WINDOW (*Ibid.*).—*Compactum* is rather strong growing. We would prefer *Tom Thumb*, or *Improved Frogmore*.

FUCHSIAS ROOTED IN SPRING (*Ibid.*).—Keep them in the pots in which they are; if in the ground, protect them there, or lift and pack them in pots and boxes when the leaves fall, giving them separate pots as they begin to grow. *Fuchsias*, grown as standards until they become large, will not want large shifts, as the heads will be smaller than plants of the same height, clothed like a pyramid, from top to bottom. *Spring-rooted cuttings* is a rather indefinite expression. We have such *Fuchsias* now of

large size and in full bloom; we have others that have been left pretty well to weather it. The latter may stand all winter in a two-inch pot; the former, in an eight or a ten. See what was said of *Standards* the other week.

PRUNING PLUM AND APRICOT-TREES (H. J. B.).—You require direction from the commencement of spring through the following year. This will, no doubt, be attended to in good time. Meanwhile, what is of more importance, pinch out now the points of young leading shoots; remove every lateral, and all breastwood not wanted, keeping in mind that the *Plum-trees* produce chiefly on small spurs, and the *Apricots* on spurs and young wood of this season. It is important that every leaf left should have full access to light. If extra luxuriant, prune the roots next month.

FLORICULTURAL DESIGN—WHAT IS IT? (Ibid.).—Aye, what is it? Why did not the Society prevent all dispute by stating what they meant by the word. Some offer prizes for a *bouquet*, and you get a something in a huge *punch-bowl-like* vase, requiring a man to lift it. Everything should be clear and distinct. We should exclude nothing from a *floricultural design* that was made of flowers, that showed good taste, was harmonious in its parts, and that involved nothing, or but little opposed to a natural character. Thus, flower-gardens, laid out with beds filled with flowers, and showing the walks in gravel or grass, would be such a design. A wreath of flowers would be another; and so would a crown, or coronet of flowers. If a man chose to construct a house, a castle, or a temple, of flowers, it would be hard to say it was *not* a floricultural design, though not quite so much so as the others, merely because it is, so far, not true to nature; that though we have among us many *faïry forms*, they are yet too heavy to get up and down, and live among the beauties of such a tenement.

TREES FOR WALLS, NEAR MANCHESTER (A Subscriber's Gardener).—The statement, "we are surrounded by tall chimneys," puzzles us. If you have much smoke and shade you will injure early trees, such as Apricots and Peaches, and, in that case, it would be better to have a portion filled with the finer kinds of Cherries, Pears, and Plums. On further information we may decide differently. Meanwhile, the following might do:—

South Wall, 100 yards long.—NECTARINES.—3 Elruge and 3 Violette Hative. PEACHES.—1 Early Anne, 1 Grosse Mignonne, 1 Royal George, 1 Noblese, 1 Barrington, 1 Late Admiral. APRICOTS.—1 Large Early, 1 Breda, 2 Moorpark. PLUMS.—1 Coe's Golden Drop, 1 Victoria. CHERRIES.—1 May Duke. FIG.—1 Brown Turkey. *East Wall*, twenty yards long, twelve feet high.—CHERRIES.—1 Elton, 1 Florence, 1 Black Tartarian, 1 Morello, in the darkest corner. *West Wall*, twenty yards long, twelve feet high.—PEARS.—1 Marie Louise, 1 Beurre Diel, 1 Glout Moreau, 1 Beurre Rance.

FLOWER-BORDERS (J. S. R.).—You want a choice assortment of herbaceous plants and bulbs on each side of the door, in 1 and 2, with room enough to plant summer half-hardy things in between them, and we shall soon give lists of such. *Crimson Boursault* and *Felicite Perpetuelle* are just the two *Roses* you are in want of. Mixed herbaceous plants will be the best for the two borders; when Zinnias, and other half-hardy things, go wrong, you lose a season. You will have room for two rows of *Standard Roses*, and six or eight feet between them. Do not think about making *Match-beds* of 1 and 2; it would take a mint of money to do the thing properly; let them be in mixture all the year round. Old *Tom Thumbs* and old *Fuchsias* will do in the wood-box, provided you can keep the frost from them. All the old plants of both kinds in the kingdom will keep anywhere, if free from damp, frost, and parching dryness.

HYMENOPHYLLUM TUNBRIDGENSIS (Amen).—This beautiful Fern requires a peaty, sandy soil, and a shady situation; and, if it has a bell-glass over it, it will thrive all the better. The fine specimens shown at Chiswick and the Regent's Park shows, are so grown, and are cultivated in a close frame, or even a hothouse. It will not thrive well in the open air, excepting under peculiar circumstances, such as being near a waterfall, or on the shady side of a hill; or loose, rocky, wet descent; where the sun seldom shines upon it. You do not mention in what situation yours is placed in; is it similar to any of the above? if not, that is the cause of your failure. Adopt some one or other of the above methods and you will succeed.

SMALL CROCUS BULBS (A.).—You took up your Crocuses in July last, and found the roots so small, that you fear they will not make a satisfactory show next year. You do not state when you planted them, or in what kind of soil. In those points of culture you may have failed. You had better select a few of the largest, and purchase sufficient to fill your beds. The smaller roots you can plant for stock. Mr. Appleby will very soon write an essay on their culture; defer the planting of your small roots till you see that paper.

MOVING A MULBERRY-TREE (A Subscriber).—The Mulberry-tree, five inches in diameter, may be moved with perfect safety as soon as the leaves turn yellowish, especially the short distance (a few yards) you mention. Open a trench two feet wide, beyond the radius of the roots, and with a three-pronged fork gradually work out the soil, preserving carefully every fibrous root till the trench comes to eighteen inches of the tree; then dig deep, and hollow out the soil under the ball as far as possible; when that is done, place four short boards, one inch thick, under it, so as to form a cradle, lash them together with ropes, and place other four boards on the top of the ball, and lash these to the under ones. Then tie a long, strong pole firmly to the stem, placing round it first some thick sacking cloth, to prevent the pole rubbing off the bark. When this is done, have as many men ready as will have power to lift it. Prepare the hole to receive it, and lay a layer of good soil at the bottom of the hole. Then let the men gently lift the tree, keeping it upright, and carry it to the hole, lower it gently into it, spread out the roots, and fill in around the ball some more good earth. Fix three cords, triangularly, about two-thirds up the stem, and fasten each end down to the ground firmly with three strong hooks driven fast into the ground. Then give a good watering, and if all this is carefully done, your tree will be sure to grow. Mulch it with a thick covering of littery manure, to keep the soil moist through the succeeding spring and summer.

BEES.—W. A. E. says,—"I have a stock of bees three years old this summer, (queen, two years old.) Last year it did not swarm, but worked in a super. After the middle of July, the weather was so bad for making honey that it carried all the contents of the super into the hive, and yet was very poor for the winter. On the 28th April, on examining the hive, which was *very* strong with bees, they all seemed dead; however, on sprinkling them with honey, about a dozen began to crawl about, and, strange to say, from there being, I suppose, a good deal of brood in the hive, they increased, and the hive has now become pretty strong, and has nine pounds of honey in it. Breeding has come on, and still goes on fast; but there have been *no drones*. Will the hive do well if fed? or will it dwindle away from not having had drones? My other stock, which is in an adjoining garden, has had a great many drones, which are now being killed." [Make your hive up to twenty pounds by feeding, and no fears need be entertained of its making a good stock for next season.—J. H. P.]

BOX FOR WINTERING PLANTS (C. Litchfield).—Sides higher than the plants will be best. Plunge the pots in coal-ashes. All the plants you mention will do in it, and require to be kept cool. There are many kinds of Aloes. Buy a May-swarm of *Bees* next spring, or one weighing twenty pounds now.

VERBENAS (G. B.).—They were all withered. Flowers must be packed in damp moss, as well as in a box.

PANSIES (Henricus).—None suited for anything but planting in the border.

LONDON HORTICULTURAL SOCIETY (Cantab).—The secretary will give you the information you need. *Forsythia viridissima* is hardy.

PRESERVING PLANTS IN WINTER (A Cockney Amateur).—See what we have said above. Your box will require covering with straw, &c., to exclude the frost.

TOMATOES DECAYING.—F. W. S. has a row of Tomato plants trained against a S. E. wall, several of which have recently become affected by a disease apparently resembling the potato murrain. The stalks become spotted, the foliage blackens and withers, and the fruit decays in most instances before it changes colour. Thin out the branches; cut the roots all round, by thrusting a spade into the soil, at a foot from the stem, all round; and rear a spare cucumber light over the plants at night, and in cold wet weather.

PHLOXES (W. S. Epps).—All your seedlings are beautiful, and of good form, but especially do we admire the following for the strikingly distinct contrast between the colours of the eye, and of the limb of the petals. We name them in the order of our admiration, mentioning the best first. No. 6, Rosy Pink, with bold star-like white eye. No. 7, Lilac, with eye like preceding. No. 4, Pale Violet, with white-fringed maroon eye. No. 1, Pink, with white-fringed carmine eye. No. 3, Carmine self, very large.

SHANGHAI CHICKENS (A Subscriber).—Those having five toes have certainly a taint of Dorking blood in them.

SPANISH COCKERELS (J. C. Ambler).—The symptoms are those of Roup. Your medicines were more calculated to injure than to cure. See what directions have been given in our pages.

PETUNIAS (R. D.).—All withered. See what we have said before about not packing in damp moss.

FUCHSIA (John Bull).—This, with very stout, scarlet sepals, and crimson corolla, is worth preserving, if the sepals reflex, as in the single specimen we received.

BEES (W. Horsley).—You had much better let your old hive remain as it is, for having sent out a swarm this year, it is sure to have a young queen, and being so rich, will give you an early swarm next season; besides, the honey from so old an hive would be of little value. Make your swarm up to 20 lbs. by feeding.

FOWLS DUNG (Incubator).—This is one of the best of manures for Roses.

CUTTINGS (1001).—We cannot undertake "to satisfy your brain;" we have told you the facts.

COTTAGE GARDENERS' DICTIONARY (J. N.).—If you apply to our publishers they will do all they can to complete your set. You can have the numbers of *THE COTTAGE GARDENER* which you mention.

BOTTOM-HEAT BY PIPES (A New Subscriber).—The paper referred to is in our No. 236, page 7.

DISEASED COCHIN (E. B. Fulham).—The bird forwarded died of consumption; the lungs were extensively diseased. In a very early stage, the disease might be arrested by cod liver oil; latterly, no treatment would have availed. The illness, most probably, arose from exposure to wet or cold. Rue and garlic are stimulating, and most unlikely to be of service in any disease whatever. The arrangements as to charge, &c., will be found at page 195.—W. B. TEGETMEIER, Tottenham.

NAMES OF PLANTS (Inquisitive).—Yours in *Rochea* or *Crassula falcata*. (A Tyro).—Your plants, &c., came to hand well-packed, as persons should send specimens to be named. 1. *Hibiscus syriacus*; var. *purpureus*. 2. *Hibiscus syriacus*; var. *albus*. 3. *Phillyrea media*. 4. *Viburnum opulus*. 5. *Eunonymus latifolius*. 6. *Crataegus glandulosa*. 7. *Phillyrea latifolia*. 8. *Crataegus Crus-galli*; var. *pyracanthifolia*. 9. *Zanthoxylum fraxinifolium*. 10. *Cedrus deodara*. 11. *Ampelopsis hederacea*. 12. *Combretum purpureum*. 13. *Pittosporum Tobira*. 14. *Melia Azedarach* (?). 15. *Aster argophyllus*. 17. *Lavandula dentata*. 19. *Saxifraga cordifolia*. 20. *Phillyrea media* var. Send us specimens when in bloom of 16 and 18.

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WEEKLY CALENDAR.

M D	D W	SEPT. 29—OCT. 5, 1853.	WEATHER NEAR LONDON IN 1852.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
29	Th	MICHAELMAS DAY.	29.292—29.179	63—42	S.W.	02	1 a. 6	42 a. 5	1 4	26	9 45	272
30	F	Bearded Chestnut; wood sides.	29.674—29.470	59—42	S.W.	13	2	39	2 20	27	10 4	273
1	S	Feathered Thorn; woods.	29.540—29.436	55—45	S.W.	02	3	37	3m39	28	10 23	274
2	SUN	19 SUNDAY AFTER TRINITY.	29.536—29.342	59—41	S.W.	03	4	35	sets.	29	10 42	275
3	M	Feathered Footman; Wales.	29.849—29.690	59—33	W.	—	6	32	6 a 9	1	11 0	276
4	Tu	Large Sword Grass; gardens.	29.752—29.001	56—49	S.	1.06	7	30	6 28	2	11 18	277
5	W	Brindled Green; wood sides.	29.486—28.987	56—39	W.	10	9	28	6 51	3	11 36	278

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-six years, the average highest and lowest temperatures of these days are 63.5° and 44.5° respectively. The greatest heat, 80°, occurred on the 5th in 1834; and the lowest cold, 28°, on the 5th in 1850. During the period 88 days were fine, and on 93 rain fell.

BRITISH WILD FLOWERS.

(Continued from page 473.)

NASTURTIUM AMPHIBIUM: Amphibious Yellow Cress; Great Water Radish; Great Water Rocket.



Description.—It is a perennial. Roots long and stringy,

perpendicular, not creeping, but throwing out numerous fibres, such as proceed from the lower parts of the trailing or floating, wide-spreading, leafy, grooved, not much branching, stem. Leaves alternate, generally smooth, but occasionally downy when growing in dry situations; the lowermost on long stalks, deeply comb-toothed under water, otherwise elliptic-spear-head, cut, or toothed; upper ones stalkless, or clasping, oblong, comb-toothed, saw-toothed, or nearly entire, all varying greatly according to the depth of the water, or strength of the current; on such plants as grow entirely out of the water, the leaves are smaller, broader, and merely toothed. Flowers small, plentiful, in aggregate clusters. Petals bright yellow, always longer than the calyx. Pods usually small and abortive, roundish, tipped with the style often as long as themselves.

Places where found.—It is common in rivers, brooks, and sometimes on their banks that are seldom overflowed.

Time of flowering.—June to August.

History.—Although of very pungent flavour, and noticed by the older herbalists, yet they preferred employing the common garden Radish, which they considered as possessing the same virtues in a milder form. It is one of those plants which exhibit, most strikingly, the aptitude bestowed upon them to adapt themselves to circumstances. Usually buried by the water, though equally capable of living on a drier soil, whence its name “amphibious,” it has a difficulty in ripening its seed. To compensate for this defect in the usual mode of reproduction, it has an extraordinary facility in producing roots, by which it is rapidly and widely propagated. Then, when it is growing on land its leaves are moderately broad, but when growing in flowing water they become finely divided, just in proportion to the rapidity of the stream. The intention of this wise provision seems manifestly to be to diminish the broad surface which would give greater hold, and, consequently, uprooting power, to the stream. (Smith. Martyn.)

THE Crystal Palae at Sydenham,—“The Palae of Light,”—is rapidly advaneing, and both within its crystal walls, and around its terraces, are already gathered sufficeint of its treasures for the mind to fill up a tolerably accurate vision of what it will be when it stands forth adorned with all the wealth contributed to it by nature and art.

Even now, when standing beneath its sky-blue arches of glass, the speetator feels that it will be an epitome of the world—that there will be gathered together the produets and illustrations of all nations—of all arts—and of all ages. Already does the Egyptian Temple, and the statuary of Greeee and Rome, give lessons of what were the powers and genius of nations and ages passed away long even before the Christian Era commenced; and works of the middle and later ages are following in detail, and serving to show that though we have men strong in the arts now, yet that they had giants in those days also.

This gathering together of the products of art, from the time of the Pharoahs down through that of the architect-Monks of the dark ages to the statuaries of modern Europe, bring evidenee which all feel of the simple truthfulness that dietated the first, and is revived in the last; and the littleness that frittered about the second.

Being such a sehool as this for the public mind and taste would demand for the Crystal Palae even more than our nation's support; but still more so, when we know that it will be a Museum of Natural Produetions, shewing their uses in the arts and seienees; that these illustrations will include the arts and seienees of all nations; and that its still more eomprehensive plan embraces emporiums for the supply of all the require-ments of every-day life.

That it will meet with the support antieipated admits of no doubt, for the age is utilitarian, and no mortal mind ean conceive a plan so eomprehensive of utility as

this. No taste, no want, seems to be without its source of gratification and supply. Even the gigantic Palms will tower-up here as unobstructed as beneath eastern skies; Orchids will cast around their odours as in the jungles of the tropics; Aquatics will float in waters suited to their habits, whether from torrid or temperate climes; and flowers of all seasons, and all nations, will find a suitable home in some of those far-spreading galleries, or beneath some of those vaulted transepts.

Nor is the space for utility or for pleasure confined to these, for stepping forth upon the vast terraces which encompass its transparent walls there is outspread a view which none in England surpasses. It is a rich, home-panorama, circling, before and around, over a surface whose boundary-line is some twenty miles from the point of vision. The terraces themselves will be among the grandest of the world; and then the gardens, which are extending away from the foot of their noble flights of steps, are beginning to give striking evidence of the genius and taste presiding over their arrangement.

This subject, though our peculiar province, must at present be only glanced over, for we shall dwell upon them in detail after the present planting season is over, and enables us more entirely to comprehend the particulars.

The Italian Garden, with its three fountains, on which the eye rests at the foot of the lower terrace, is on a scale commensurate with the palace, and leads gradually and gracefully to geometrically-arranged flower-beds, set in the wide surface of turf, and these soften the transition to less artistic masses of plants, and so on to more uncultivated departments. At present, little more than the outlines of broad walks, excavated dells, and huge mounds are apparent; but the planting already carried out in one or two nooks are sufficiently telling of how much will be effected, not merely by the flowers, but by the harmonies and contrasts, blendings and reliefs, which can be wrought out by the gardener who knows the colours of foliage both in a plant's infancy and full age, and can, therefore, anticipate with certainty future effects and results.

We have only jotted down a few of the thoughts that a hurried visit to this magnificent design suggests; and we say most emphatically that we fully recognize its claim, which even a slight examination establishes, to the title of "The Palace of Light." The gracefulness of its proportions—the absence of any but blue-tinted shadows—and the knowledge and benefits which it will aid to communicate—must secure to it that name, whether viewed with reference either to its construction or its consequences.

HERBACEOUS PLANTS, MASSES, ETC.

REALLY I almost tremble whilst I name them—so old-fashioned; so out of date! Nevertheless, we have all seen old fashions undergo a revival, and why not our old pet Phloxes, Asters, Delphiniums, Dracocephalums, Tradescantias, Aconitums, Monardas, Chelones, Enocheras, Anthericums, Gentianas, &c.? If they are not allowed to mass with our foreign visitors, surely

they may be allowed to show their homely faces in some portion of our dress grounds. But it is by no means certain that they—at least, some possessing superior qualities—may not yet be worked-up in our massing system; for when the rage for *mere colour* sickens, who shall say that form and habit may not become a capital consideration? This is the season for securing observations on the effects of the various combinations of both form and colour in flower-gardens, with some other qualities connected therewith.

In looking over some beds of mixed herbaceous plants, last evening, with a view to remark on particular forms, or combinations of forms, I was, in the first place, struck with the grace and elegance which prevailed in all spots where what are termed spiry forms prevail. To give an idea of the forms I allude to, I may point to such as the *Liatris spicata*, the *Chelone barbata*, and some of the *Veronicas*, as those commonly termed *incana*, *carnea*, or *incarnata*, &c.; some of the *Lythrums*, *Dracocephalum speciosum*, *Anthericums*, *Aconitums*, &c. I am persuaded that many of our friends must have been struck with such forms, independent of colour; forms which, perhaps, convey impressions of airiness, sprightliness, and elegance. Now, begging pardon of our gorgeous Geraniums, Lobelias, Verbenas, and such like, these forms are not to be altogether despised; if we do not esteem them now, another generation is at hand which assuredly may do so.

If, then, such spiral forms prove a relief in beds of herbaceæ, why not call in the assistance of forms in our modern massing system? The chief thing that wars against the practice would appear to be what may be termed a floral prejudice, arising from previous mental associations. The beautiful blue *Inula*, called, I think, *glandulosa*, one of the finest blues we possess—what a colour for bedding purposes! but no one could, for a moment, tolerate the enormous mass of comfrey-looking foliage. But, then, *Phloxes* are not vulgar-looking; and many other herbaceous things, when mixed by a massing system, would, I conceive, lose much of their mere border character.

There is the old *Chelone barbata*, at all times a dressy plant, and, I believe, a favourite with everybody. This elegant plant was highly esteemed forty years since. Why cannot this be worked-up in a mass? It possesses high qualifications, assuredly. Elegance of form, a character of foliage by no means commonplace, and lovely orange-coloured blossoms, which, dangling from slender pedicles, give a delightfully airy appearance to the whole; added to this, a minimum amount of foliage, both as regards individual size in the leaf, and their collective amount. By-the-by, the latter is a great essential in flowers for bedding purposes; proportion here (as in most other things) being necessarily one of the elements of the beautiful as distinguished from the picturesque.

Another singular old herbaceous plant I may point to, as possessing peculiar features and high eligibilities for the massing system, I mean the old *Liatris spicata*, one of the most dressy and manageable things in existence, and no vulgarity about it. This excellent plant, although introduced to our gardens a century ago, is by no means general, but for what reason I cannot imagine. It has one most singular property; it is, as its name implies, a spike-flowering plant, but, contrary to the common mode of development in spike flowers, it commences blooming at the top of the spike, and works downwards. Thus there are no raw-looking, terminal points to wait for; its dressy character is shown at once in the upper outline. This plant appears to me to be peculiarly adapted to work-up in a massing system; and I must continue to think, that if our modern bedders would condescend to leap the barrier which separates our exclusives—the Verbenas, Geraniums, &c.—and let them mingle with the throng, that such spiry forms would prove of infi-

nite relief to those clumpy masses of blue, scarlet, &c., which it is extremely probable will soon be liable to innovation, whether from taste or fashion. This *Liatris* is a pale purple, which, if not of the most conspicuous character, possesses the merit of "freshness." The plant commences blooming in the middle of June by ordinary culture; but everybody knows that such things, in order to carry out a special object, may be made to blossom a month earlier.

Now that I am about calling on old acquaintances, I may point to some of the *Veronicas*, as distinguished amongst spiry forms. There has been such a confusion of names in this genus, like the Asters, and some others, that I am almost afraid to point to species applicable to the case in hand. Those I would name amongst spiry forms, are such as are commonly called *V. carnea*, or *V. incarnata*, *V. incana*, and some other spiry kinds. I freely confess that their colours are not glowing, but their forms are elegant, and will be found of some service in the modern bouquet. At the time I write, we have some herbaceous beds with several of these *Veronicas* in blossom, and were they removed, the beds would not carry half their present effect as to outline, &c. Some of the *Lythrums*, too, are spiry and elegant; but as to massing, there is so much of the ditch-weed about their foliage as would give a vulgar appearance. They are, however, of much utility in the mixed herbaceous bed or border. The old *Dracocephalum speciosum* is of this character; but would not come in with any massing system on account of its extreme lateness. This, like the latest Asters, and some late Phloxes, is of much importance in borders, where it is desirable to carry out gaiety to the very edge of winter. The *Anthericum*, too, especially that with such slender flower stems and narrow grass leaves, and which used to be called either *A. liliastrum*, or *liliago*, is a most genteel-looking plant of the spiry class; and from its pure white, and lengthened flowering, might be worked-up in mixed masses where white was requisite. It has a beautiful effect near the margin of herbaceous or shrub borders.

If it be argued, that such herbaceous plants grow too high; why they may be readily dwarfed by being potted, and the pots plunged. One of the chief causes of the decadence of the herbaceous tribes, was, doubtless, the neglected and exhausted state in which they but too frequently appeared previous to what is termed the bedding system becoming general. But Phloxes, for instance, in an old shrubbery border, probably full of tree roots, and those receiving annual culture, are widely different. The former, with a profusion of lean stems, betokening exhaustion, with flowers of half-size, and little colour, and which, of course, prematurely cease blossoming; the latter, bold-looking, healthy, showy, and enduring. Indeed, the same may be said of most of these tribes, being like many a pot plant, although long known, when placed under high culture, and well brought out.

Having given these few brief hints, in order to set other minds at work, and to endeavour to rescue some deserving plants, which have merely been under a cloud for awhile, but which the return of brighter skies may one day again reveal, I will offer a few remarks on "odds and ends;" just observing previously, that the fine genera or species adverted to here by way of illustration, are by no means qualified to do justice to the design. Our readers will find a host of nice things, possessing such qualifications, in a full and descriptive list of herbaceous plants.

CHINA, OR GERMAN ASTERS.—Do all our readers know that these fine autumnal flowers will transplant without damage when coming into blossom? The fact is unquestionable, for I have done it this season, and repeatedly in previous years, and remember my father practising it almost annually some forty years' since.

All they require are good waterings and a liberal soil. The best Asters I have seen grown were in a dark material, which might be considered a mixture of sandy heath soil and humus, or the old decayed remains of the wood-pile, the weed-heap, and such like, which material had become simply a black mould. But, it may be asked, Of what use is this knowledge? Why this; that persons following up a bedding system, and desirous of providing a succession after early annuals, or things of ephemeral character, may thus make a provision in a reserve ground, and be in a position to replace any bed at a couple of hours notice. This reserve garden is so important an adjunct, by-the-by, of every *high gardening establishment*, that I continue to wonder how it is that we do not hear more about it; some long winter's evening I will endeavour to show forth my ideas on the construction and management of such. I remember well, writing a paper on this subject for the late Mr. London, about fifteen years since, and one he highly approved at the time; and this I did, thinking that some one better able to follow out the idea would "come to the rescue;" but I have never seen an article on the thing since. That paper may be found in the back numbers of *London*.

However, digression done with, let me take up my tale.

WHITE IVY-LEAVED GERANIUM.—Really, a gardener, be he ever so well up in his points, may learn daily. I should have thought, half a score years since, that I knew all about the habits of this charming and distinct Geranium; but a piece of necessity has this spring added another wrinkle. I had about thirty pots of early struck cuttings of last summer, placed on a lato vinery back shelf, close to the glass in February. This house was to be kept as cold as possible, short of freezing, until the vine broke in April. They were in five-inch pots, three in a pot, potted in strong or adhesive loam. Now, these were placed on this shelf because they must be removed, and because few things but bedders would stand the situation. They were there until the house was closed for the vines, and were watered, perhaps, twice during this long period. When taken down they looked like plants which had been parched by an extremely hot and dry summer; they were, to use a common phrase, mere "shoe-leather." However, I did not despair, although I thought it a strong experiment, but planted them as a band or edging to a bed of the *Diadematum rubescens* Geranium. This bed has been excellent; the Ivy-leaved began flowering just after watering in the pots; they were turned out on the 27th of May, by my note book, and by July were beautiful; since then they have increased in beauty in spite of the untoward season we have endured. I have bedded these things years since, after being kindly treated instead of abused, and had abundance of green foliage until near September, when a few straggling blooms would appear.

And thus it is with many things: we have all much to learn. I will not offer much apology to our readers, for this gardening *OLIO*. I verily believe that this kind of information will be occasionally acceptable.

R. ERRINGTON.

SHRUBLAND PARK.

I HAD a kind invitation from Sir William and Lady Middleton to come down and spend two or three days here, to see the progress of the wonderful alterations and improvements carried on in the gardens since I left this time two years; and here I am, in the midst of the bustle, just turned into a private room to write down a few hasty notes; but I must put off the main details till next week.

Visitors from town have to enter the park by the London Lodge, where *Harry Moore* still presents the first note of preparation to this magnificent place; his

square, dark-green boxes of scarlet Geraniums, managed on his own original plan, look as rich and dazzling as when the world first heard of his plans. Half-a-mile of a gradual ascent from this lodge, through the park, leads up to the front door on the south-east of the "Hall," which is placed on the brow of a hill, at one end of a very large space of table land. In my busy days, the west front opened on two terraces, one above the other, with flights of steps at either end, and a middle flight on the second terrace. From the bottom of the second terrace to the brow of the hill the ground sloped considerably, and on this slope the Italian garden stood where *Punch* first made his appearance among a row of seedlings—*Judy* coming up to the mark the same season, and in the same row. Mr. Fleming, from Trentham, was the first stranger who took note of the two promising seedlings, while on a visit here; and Mr. Cole, the celebrated florist, named them two years after that.

I said, long ago, that two large boxes full of *Judy*, standing on the conservatory, or south terrace, and managed on Harry Moore's plan, were the most perfect things of the kind I had ever seen; without a single variation on the old mode of treating them, these two boxes are now as perfect in growth and in bloom as anything of the kind that ever was attempted. The next nearest to them in perfection, that I know of, are the two immense *Tom Thumbs* at Bank Grove, near Kingston, which I lately described, and eight vase *Tom Thumbs*, which I saw last autumn at Newnham-Courtney, near Oxford; but *Judy* here is far before them all—so that we have now a full proof that some kinds of scarlet Geraniums may be kept at least ten years in the same soil and boxes, not only without any falling back, but rather improving all the time; and for this move we have to thank Harry and the London Lodge at Shrubland Park.

The said Italian garden, on the hanging slope, is now on a dead level; and such another garden, I am quite sure, is not to be seen in this or in any other country. The ground had been cut down nearly ten feet deep on the highest side, and wheeled with barrows over the steep side of the hill beyond, into a yawning gulf, smoothed on the surface by a six-and-thirty year's growth of tree box, from seeds gathered on Box Hill, in Surrey. Before the soil was thrown out, a wide space in the centre of the hill, and in a direct line from the centre of the house and terraces, was cleared out, and down to a solid "footing," for laying in a foundation on which to run down a magnificent flight of stone steps, the finest in Europe, and in Sir Charles Barry's best style, assisted by the classical taste of Sir William and Lady Middleton, who have long contemplated and discussed the possibility of this grand undertaking. From the bottom of this hill, the ground formerly sloped away into the park rapidly, and on these slopes parts of the "lower garden" were laid out in various ways—the Rosary among the rest. All this is now buried, no one knows where, or how deep, and the whole space, to a great extent, right and left, from the line of the steps, is now as level as a die, and advanced far into the park; at the extremity of this level plateau, and in a direct line from the centre of the house, a chaste Italian colonaded loggia is erected of the purest Caen stone. It is open on the garden front, and more than half open on the park front, and at both ends, and is the very finest garden ornament I ever saw or heard of. Between this loggia and the bottom of the grand staircase, as I shall call it, the ground is laid out in the geometrical style, with broad green avenues intersecting each other, and extending to different lengths, but all ending with some specific object of nature or art. At the bottom of the grand staircase, which divides right and left from the centre line into a crescent or half-moon, a splendid

fountain plays in a basin forty feet in diameter, with a raised massive curb of beautiful stonework, in the centre of a circle of grass 100 feet in diameter, and outside that a broad gravel-walk. The ground, in some parts of this level plateau, had to be raised fifteen feet, to get it to a uniform level, and the earth for this filling-up was dug out just on the outside of the plateau itself, and the excavated parts are now formed into dells, glens, and valleys, of all forms of outline, altogether making a most picturesque and unique garden, for all sorts of wild, rock, and wilderness plants, shrubs, trees, and all manner of things.

From the bottom of these dells, up to the drawing-room level on the first terrace, there are just one hundred and seventy steps, in different flights and flats, or rests, and every flight ending in an odd number of steps, according to the prevailing fashion amongst first-rate architects and landscape gardeners.

Among other incidents of travel, I had the good fortune to meet Sir Charles Barry here, and to hear the discussions between him, the worthy Baronet, the honourable Lady, and their new gardener, my successor, Mr. Davidson, about what was, what is now, and what is yet to come, before these great improvements are finished; and if it were allowed for an old man to wish himself young again, I then thought I could wish to turn back the screw to five-and-twenty, and begin afresh. But rather let us hear about the flowers.

Mr. Davidson told me that he planted out two thousand *Golden-chain* Geraniums this season—six hundred more than ever I did. They are as borders to large beds, in double rows, and in other ways as well. I think, at a guess, he must have planted out three thousand of the prettily-marked horse-shoe-leaved *Baron Hugel* Geranium. This is one of the dwarfiest of all that breed, and the darkest marked leaf of the whole tribe, except the seedling raised at Cosey Hall, in the county of Norfolk, by Mr. Wight, after whom it is called here, but I am not sure that is the right name of it. I had some cuttings of it, and named it *Wight's Seedling* provisionally. Next the outside of some large beds they place a band of silver sand, about five or six inches wide, between the plants and the grass, and as this glare would subdue the effect of the *Golden-chain*, they plant a band, a foot wide, of *Baron Hugel*, between the sand and the *Golden-chain*, and on looking down on this arrangement from the drawing-room windows, the effect is exceedingly good. This is quite new to me as an *edging*; the silvery white of the sand, the dark and green leaf of the Baron, and the golden variegated leaf, with the scarlet flowers of both, kept in subjection by thinning, and any of the usual plants and tints behind that, towards the centre of the bed, are, indeed, most excellent. In another bed—a large oblong—the centre was of the *Flower of the Day*, about four or five feet wide, the flowers much thinned; next to that, a band of *Punch*, or some one like it, two feet wide, and in full bloom; next to that, another band of the frosted silver plant, *Cineraria maritima*; and next, the stone curb or border to the bed, which is on gravel; a narrow band of *Silene Schaffa*, or a good variety of *Phlox Drummondii* trained down, was a mixture that made a good impression.

A new mixture, which is exceedingly good and telling, is made with equal quantities of the *Emma* Verbena, a very dark purple; and *Iphigene*, a light grey one. But why tell of regular mixtures, when no one succeeds with them, except at Shrubland Park. I should think, if a good gardener were to see the four beds of this mixture here, the sixteen beds of *Heliotrope*, and Verbenas *Duchess de Nemours*, *Hamlet*, or *Haidee*, in the "Fountain garden," and the shot-silk bed in the "French garden," he would be ready to cut off his own ears if he could not do the like. It is worse than useless to pretend to say, that on

damp, low grounds such things are impossible. Geraniums will get just as leafy and gross at Shrubland Park as they do elsewhere, if they are planted in deep beds of *new* or *very rich* soil. I care not how deep the bed is made for a Geranium; I would make the soil poor enough to starve a Poppy, on a damp bottom, with only two or three inches on the top of very good compost to set them off at first planting.

D. BEATON.

STANDARDS IN THE FLOWER-BEDS AT COURTEEN HALL.

A FRIEND has lately informed me, that much as I praised the effect of these, in giving apparent space and dignity to flower-beds, that yet, upon the whole, my description did not give an adequate idea of their beauty. As confirmatory of this, and also enabling those who cannot make a personal inspection, owing to their distance from the scene, to form, notwithstanding, a correct opinion on the subject, the following measurements were handed to me, as they appeared some weeks ago:—

CASSIA CORYMBOSA.—Circumference of stem, three inches; height, from five to six feet; diameter of head, four feet, showing forty-three large spikes, or corymbs, ranging from a foot and upwards in length, the lower ones drooping gracefully. I find I also made a mistake in supposing, that when raised and potted in autumn it would be kept in the warmest end of the greenhouse, as, instead of that, it is kept, during winter, in the *coldest* end of a cool house. Shortly after taking up, and placing in a large pot, the foliage all drops, but the blooms remain persistent, affording means for cut flowers during the first months of winter. This plant may therefore now be regarded as a regular *cosmopolite*, thriving out-of-doors, with protection, in winter, in greenhouses and plant-stoves. Not long ago, I saw a fine noble shrub in the stove conservatory, at Woburn, covered with bloom, but from age, and standing long in one place, the foliage was not so large, nor the bunches of flowers individually so fine, as in the specimen planted out-of-doors in summer. There is no doubt it would also make a handsome conservative wall plant.

SALVIA FULGENS.—Two fine plants, five feet high, and each containing above thirty spikes of bloom.

It will be recollected that at Panshanger, the *S. splendens* was used in a similar manner.

SCARLET GERANIUMS.—Twelve giant plants, nine feet high. Stems, three inches round, and each having from eighteen to twenty large trusses of bloom.

FUCHSIA.—Such kinds as *cylindrica*, *cordata*, *Coroliua*, four feet in height; diameter of heads, four feet, and smothered with bloom. One plant of *Corymbiflora*, about four feet in height, head trained flat, four feet in diameter, and having thirty large bunches of flowers, hanging in a pendant position.

PELARGONIUMS.—*Vulcan*, *Nosegay*, &c., from four to six feet high, and diameter of head in proportion.

BRUGMANSIA LUTEA.—Trained flat headed. Stem, five feet in height; diameter of head, six feet; and with more than 150 flowers *fully expanded*.

ARRANGING FLOWER-BEDS.

Our friends may now judge for themselves. There is no doubt that there is rather more than an incipency of discontent budding respecting the grouping system as commonly practised. Certain colours are run upon; and these are placed down in level masses, of a yard or a pole in size, as the case may be. Even here, the regulating the *height* of the plant becomes an important object. I, sometime ago, saw a flower-garden, the individual beds of which were beautiful and well filled; and yet the group, as a whole, was very unsatisfactory; looked

higgledy-piggledy, because the relative heights of the plants had formed no feature in the arrangement. But, grant that everything here were as it should be, the eye soon tires looking upon so many feet of level blazing colour. These standards will alike give variety and repose; but we question if ever they will long satisfy the craving for variety and novelty. Hence, though reverting to the old mixed system may not be likely to take, yet there can be no question, that from the favour given to beds with broad edgings of a different colour, and the pleasure seemingly derived in looking at beds mixed with two or more colours, that the tasteful in blending two or more tints in a bed, and yet having every bed in a group prominently distinct from its next door neighbour, will, ere long, be another puzzler for the already fairly-worked brains of the gardener, if the ladies do not take this trouble, and the consequent responsibility attending it, off his hands. I throw in the latter clause not without due consideration. Inattention to it has constituted a fruitful source of disagreeables between gardeners and their employers. No doubt, it is very pleasant to have a little or even a good deal of our own way; but, as servants, though when called upon, we may respectfully state our views, if these do not convince, the duty is plain, namely, honestly to carry out the ideas and commands of our employers. A worthy nurseryman once asked me what I would do if my employer requested me to plant a tree with its roots in the air! "The half of you would throw down the tree, and throw up a good place too, and think you were doing a magnanimous act, though, in my judgment, added he, a very foolish one." This, of course, was an extreme case, but it exemplified a great principle—the connection between serving and obeying. On the other hand, failures are such disagreeable things that nobody cares to own them. The responsibility of them should honourably be placed on the right person.

But to resume. Mr. Beaton, and others, have already done something to advance the mixing of beds in a tasteful manner; and what is applicable to the bed is equally applicable to the basket, vase, and balcony plot. With leisure to note and observe much that is done in this way, he and Mr. Appleby may help us to many an idea. Among others I have tried, I would mention and recommend one that has been admired here for several years—namely, a mixture of *Mangles' Variegated Geranium* and the blue *Lobelia speciosa*. In a dry, mild autumn this keeps good to the last. In cold, wet seasons it will wane by the middle of September. As the blooms of the Geranium will not be thick enough to counterbalance the free growth of the Lobelia, I should consider either plant rather poor for a bed by itself, though the Geranium is rather pretty when thickly studded with its small flowers. Many even place it in their estimation far before *Flower of the Day*, *Mountain of Light*, &c.; but one feature of the *Flower of the Day* is, that though its blooms are produced rather sparingly, they stand the wet and weather remarkably well. Some of our best gardeners, after running it down, are now as loud in its praise. I have never done great things with it as a pot plant—the flower-stalks are too short, and the flower trusses not numerous enough; it also looks best when seen from a distance. I found this out in a very simple way. A gentleman was sitting within four or five yards of a bed. "How beautiful the foliage of that Geranium! How much prettier it would have been with the scarlet blossoms of the *Improved Frogmore*. Even that other bed (some twenty yards farther off) is a decided improvement in colour. I would have rung the changes, and had that nearest the main walk." And the gentleman had to go and stand beside the other bed to be convinced that they were identically the same. There was no mistake about it. Here, as in other matters, "distance lent enebantment to the view."

Another mode of guarding against sameness is to make a fresh arrangement of materials and colour every year, so that no bed, or vase, with but few exceptions, shall have the same appearance two years running. A lady lately told me, that even with all the groups, as to form, stereotyped for years, yet the complete changing of them every year, as respects colour, was as pleasing as passing through an old mansion, and finding the papering and carpeting in each room new and fresh. This can be done well, however, only after a great amount of consideration and reflection, all of which are spared to those who place the same things, and the same colours, in the same places, year after year. When a group has given great satisfaction, it becomes a serious question how to alter it, and give as much satisfaction in the following year. The very changing of colour often becomes a perplexing matter, so as to present a group that will constitute, when completely altered, a harmonious whole. No wonder; though many cast upon the arrangement of this year a "last sad lingering look." But not only should the colour be changed, but the things themselves should also be changed. Have a Geranium garden in one place, or a Verbena garden in one place, for a couple of years, and everybody expects to see them again—takes it quite as a matter of course; and, however beautiful they be, the interest is weakened, because the feast enjoyed by anticipation may have far exceeded the reality. Much of the pleasure obtained by the possessors of flowers, and flower-gardens, arises from the means they possess of delighting their friends and visitors; and whenever, year after year, these visitors know the identical spot where they will find a certain plant, the blue-aproners may rest assured that a change of position is required. Besides, on the whole, the plants will thrive all the better from the regular rotation of crops. For these reasons, though I prepared a place for a Verbena garden, so as to bring the masses of bloom nearer the eye than when growing on the level ground, and, to give variety and elevation still more, had, for a number of years, poles in the centre of the beds, and these poles connected together with wires at their summit, up which poles, and along which wires, *Lophospermums*, *Maurandias*, *Convolvulus*, *Tropæolum pentaphyllum*, &c., elambered and dangled, I see that now a change is highly desirable, both as respects rotation and novelty. Trouble and thought may thus be increased, but these must be minor considerations to those who wish to foster and maintain a love for the beautiful in flowers.

Either with or without these separate means of giving an interest to our flower masses, it is quite natural that we all should feel a deep interest in any novelty that is likely to be generally useful, and which, either from its habit or its colour, enables us more easily to get what we particularly want. And yet, with all our introductions, it is amazing how few of these novelties come to be much used after the first season. Without some changing, and mingling, and standarding, as I have above referred to, it is quite evident that our gardens, individually, will be deficient in freshness, while most of those in the same district will become *fac similes* of each other. Unfortunately, I can offer no consolation here, as most of the comparative novelties I have tried this season have disappointed me, and that after previous trials. A few of these I feel bound in honesty to mention, as I had previously given them a high commendation. I will, merely for this purpose, conclude this rambling letter by specifying one or two.

CALCEOLARIA SULTAN.

When I last mentioned this, I spoke of it as I found it. It was then a perfect blaze of beauty. It stood the deluge that happened at the Northampton Show well,

and several other heavy rains that succeeded. That, and two beds of Ploxes, were what ladies could not get away from. Of all Calceolarias I ever witnessed, it was the richest and most massive for nearly two months; but when a sharp wind came, and the blossoms still wet with rain, a great portion of the blooms were scattered at once. The black disease then began to assail a few of the plants, the young shoots did not succeed the older ones quickly, and now, though there is a quantity of bloom, the beds, as a whole, are thin and lanky, while every other Calceolaria, yellow or dark, is a dense mass. For flower-gardens near London, where a massive, fine display is wanted, before families leave for the country, for single plants in pots and in borders it will be highly useful; but, I should rather object to its use in a group, where a continuous blooming is desired until the frost comes.

The two others I shall mention, are *Phlox Thompsonii* and *Phlox Maycana*; the first, for its rich crimson; and the latter, for its stripes of purple and white, along with *Sultan*, took the fancy of the ladies above every plant in the garden; and for about six weeks very beautiful they looked; but the cold rains were too much for them. First the stems got yellow, and then the leaves. I had tried them before, and had reason to be satisfied with them. But I did not treat them the same way, as the beds were wanted to be the lowest of a group; instead of growing them upright, they were pegged down, and that exposed the stems more to heavy rains and alternations of temperature. What I tried before, and what I have heard of since as answering well, were allowed to grow in an upright manner. There is yet hope of such plants, therefore, for bedding, though I would not like to trust them in a prominent place. As pot-plants they will always be interesting. R. FISHER.

CULTURE OF THE CROCUS.

THIS beautiful, early flower, the herald of the spring, is so universally known, that it seems almost superfluous to write about it; yet it is a fact, that many cultivators scarcely understand how to grow it. Only last week, a correspondent wrote for information on this subject. Presuming there may be many of our readers that would be glad of some instruction in Crocus-culture, as well as my correspondent, I shall try to supply that information. The Crocus, like the Hyacinth, is annually imported from Holland, in great numbers, and certainly we can grow them quite as fine and as well as the Dutch, if sufficient pains and care be taken of them. Perhaps, in the case of the Hyacinth, the peculiar climate of Holland suits it so well, that we cannot, without a great outlay of expense and care, compete with them. Hence, it may be cheaper to buy them of the Dutch than to attempt to cultivate them in our unfavourable climate and soil. But this is not the case with the Crocus. It requires no particular climate, nor is it very particular as to soil, and, therefore, I think we might grow them successfully here as a commercial speculation, and have the roots quite as large as the imported ones.

Situation.—The proper site for a Crocus-ground, whether to flower them finely or to produce large roots, should be in the country far from smoke. Close to large towns, especially manufacturing ones, with their countless long chimnies pouring forth thick black clouds of smoke, the Crocus will not live long. The bulbs yearly decrease in size, and eventually perish. In gardens so unhappily situated, it will be necessary to plant fresh roots every year, if fine clusters of flowers are desired every spring; but in the pure air of the country the Crocus will thrive, if properly managed (which management I shall, in this essay, try to describe), for years, and continue to

increase in number, till the cultivator, if an amateur, will have a difficulty to find room for his stock.

Soil.—The Crocus thrives best in a rich, deep loam, not too light, nor yet too strong. In a geometrical flower garden, the soil generally is properly drained and well-prepared for all kinds of flowers, and such preparations suit the Crocus admirably; but when it is cultivated for the sake of preparing the bulbs for the flower-garden the soil must be made very rich; and in order to do that, a layer of well-decomposed dung, two inches thick, should be wheeled on the ground; the ground should then be well dug, and the manure well incorporated with it. If opportunity serves, it would be desirable, after the first deep-digging with a long spade, to fork it over two or three times with a five-pronged fork, mixing the manure thoroughly with the soil. If it is not of a sandy character, add a good layer of river-sand with the dung.

Planting.—In the beds of the flower-garden where they are to bloom, plant no bulbs that are not of a fair size, such only being likely to bloom well. Each bed should have a separate colour, that is, one should be yellow, another white, and another purple, and another the striped varieties. By so arranging them, the effect is more rich and striking than if the colours are mixed.

In some gardens (Trentham, for instance), there are long beds on the sides of the walks, and in such situation they are planted in rows, each row being of a different colour. This has a very good appearance; the beds, when the Crocuses are in flower, look like a rich ribbon of the gayest colour.

The best season for planting is about the first week in October; but they may be planted through the whole of that month, or even till the middle of November. Choose a dry day for the operation, and, if possible, when the ground is tolerably dry also. They may either be planted with a blunt dibber, or drills may be drawn with a triangular hoe, and the roots planted at the bottom of the drills. For beds on the turf, or in a geometrical flower-garden, the drills should be drawn across the beds; but in long, narrow borders, the drills, as a matter of course, should be drawn lengthwise. If they are planted with a dibber, the roots should be placed in rows on the beds, at their proper distances from each other in the row. The distances should be six inches between the rows, and four inches from bulb to bulb in the row. If the bulbs are good ones, and a fair size, the foliage will cover the ground entirely; and the blooms will stand thick upon the bed, so as nearly to touch each other. The depth they should be covered is two inches above the bulbs; the dibber should have a notch round it to show the depth, and the drill should be that depth also. I prefer the drill method myself, but it is not essentially superior to the dibbling system. In either case, I should recommend the holes made by the dibber, and the drills made by the hoe, to be filled up from a barrow of roughly-sifted rich soil, to that of levelling them in with a rake; there is a greater certainty of covering them the right depth by the former method, besides preventing the roots being misplaced, if the holes or the drills are levelled in with the rake.

T. APPLEBY.

(To be continued.)

JOTTINGS BY THE WAY.

(Continued from page 483.)

MANCHESTER BOTANIC GARDENS.—These gardens have greatly improved since I visited them two years ago. The subscribers, I understood, have increased, and thus the means of success in improvement have been afforded. One of the houses, formerly occupied with Orchids, has been converted into a house for that

noble Water Lily, the *Victoria Regia*. When I saw it, about the middle of August last, it had fourteen perfectly healthy leaves, the largest measured five-feet-seven-and-a-half-inches in diameter, and showed the beautiful crimson edge turned up full four inches, forming, as it were, a large leafy saucer. There was a flower expanded, which measured fourteen inches across. The plant was growing in a square tank, measuring superficially 424 square feet, yet there was not room for the immense leaves. Mr. Cameron, the respectable curator, said, he found it necessary to bend the leaf stems, in order to make room for the leaves. Certainly, it is a magnificent production of nature, and must, in its native rivers, form one of the grandest sights imaginable. I have a son at Demerara, and in a letter he sent me, he said, that one day he and some others took a boat and went up the river a considerable distance. They came to a part where the river formed a sort of bay, and on opening into it, they found the surface of the water so covered with the leaves and stems of the Victoria Lily, that they could not force the boat through them. My son, being rather venturesome, and a light weight, got out of the vessel and walked upon the leaves. They were so large, and the stems so interwoven with them, that they bore him up quite safely for some distance from the boat.

In the large stove of the Manchester Garden, I noted a fine plant, in bloom, of the rarely seen-in-that-state, *Yucca aloefolia*. I was told it was twenty-three years old, and a splendid object it was, with its long spike of pure white flowers. Near it stood a magnificent Palm, the *Caryota urens*, in fruit; it had grown to the very top of the lofty dome in the centre, and was in danger of breaking through the roof. To prevent this, and preserve the top, Mr. Campbell hit upon the novel expedient of lowering the root. The soil was excavated around and under it, and it was gradually let down lower into the earth, some four or five feet. This not only lowered the top, but checked the rapid growth also. The plant did not seem much worse by the operation. Another Palm, the *Rhapis flabelliformis*, in the same house, was also in fruit.

The greenhouse plants, for want of room, have been kept in small pots, and thus the dwarfing system, *a-la* Chinese, has been effected. This want of room, however, is about to be remedied—a large conservatory is about to be built. I saw the stakes put down where it is to be erected. It is to be sixty-five yards in length, and forty-five in breadth, and of a proportionate height, and is intended to be a promenading winter garden, as well as an habitation for plants. This noble building will be a credit to the public-spirited subscribers, and a very agreeable place of resort for the numerous inhabitants of the large, flourishing city of Manchester.

In these gardens there was, formerly, a large piece of ground set out as a garden, to exhibit all the best kinds of fruits and vegetables. It was found to be almost useless, and is now converted into the more pleasing object—a popular flower-garden. I am promised a plan, or sketch, of it, and all the flower-beds also, with their forms, and a list of the plants grown in them. I think my good friend, Mr. Beaton, will be pleased with it, and I shall submit it to his inspection. Perhaps he and our Editor may think it worth publishing in *THE COTTAGE GARDENER*. I have never seen a flower-garden that pleased me better.

In a secluded part of these gardens I met with a *Rose garden* of considerable dimensions. In the centre was a circular bed about twelve feet diameter. A gravel walk surrounds it, and then a bed three feet wide, then a walk, succeeded by another bed, and so on to the outer circle. These beds are crossed by four walks at right angles, leading to the centre bed. The Roses are planted in single rows; the

tallest standards in the centre, so that the visitor can walk round and round, and inspect every rose-bush without treading upon the soil. I think this an admirable arrangement of this queen of hardy flowers. The garden was originally a flat surface, but has been broken by mounds and long elevations, the materials for which were obtained, in a great measure, out of a space laid out as a winding lake. The water is well stocked with all the hardy aquatics, with the exception of the various kinds of *Nymphææ*. The finest aquatic here is the *Sagittaria latifolia*. It was in flower when I called. The flowers are produced in spikes, which stand above the water a foot or eighteen inches. The flowers are white, and as large and as double as a Hyacinth, which they greatly resemble. Every hardy aquarium ought to have this truly beautiful plant in it. On the banks of this lake there is a winding path, and on the side of that walk from the water there is a large rockwork, well stocked with the best Alpine plants, and many hardy Ferns. Some parts of the banks are clothed with lofty trees, affording, in hot weather, a pleasant, cool retreat from the burning rays of the sun.

T. APPLEBY.

(To be continued.)

ON PRESERVING WINTER FRUITS.

ALTHOUGH all horticultural writers agree that a fruit-room ought to be clean, yet not a few urge the necessity of its being as "sweet as a dairy;" this sounds very well, but I wonder who ever attained that high position yet, for I have a shrewd guess they had but very little fruit to preserve, because, however agreeable the above tempting observation may be, which has, by-the-by, become as common as "household words," yet there are few persons conversant with our winter fruits but are aware that they emit odours, of various degrees, which would be inimical to the good-keeping of milk was it placed in the same room. Indeed, the said odours are no more under the control of the collector of fruit than those of certain cesspools, sewers, &c., are under the command of the sanitary commissioners. Neither do we wish our brethren to attempt to check or stifle such exhalations farther than by retarding, as will be hereafter shown, all undue haste in that operation being performed by the circumstances under which the plants are placed.

If fruit be gathered, and placed in such a position as encourages it to part with those subtle gases, which, in common phrase, we call "smell," in too great a profusion, in just like ratio is it travelling on the road to destruction. Now, as this is the key to the whole mystery, it would seem to imply that extreme cold would be the best preservative, and, to a certain extent, no doubt it is. In fact, I think in all cases it is; but cold must be mitigated, in certain instances, wherein other reasons call for the operation of ripening or mellowing being performed by greater warmth, otherwise, the flavour which nature intended the plant to have will be deficient. From the same cause and circumstances, fresh meat in Russia and North America, after being kept some months in a frozen state, loses its flavour. The chilliness by which it is surrounded, instead of sealing-up and preserving those good points, would seem to dispel them, therefore, we may, in like manner, keep our pears in an ice-house; but it is questionable whether they can be brought out from it with any chance of their attaining that flavour they might have had if ripened sooner in conditions more like that which nature intended for them. It is, therefore, on this principle that retarded fruits are seldom so good as those ripened at the proper period.

However, the requirements of society are such, that

the longer the period wherein good and useful fruit can be commanded, the more the merit; and some, as Grapes, Apples, Cucumbers, and even Pine Apples, may occasionally be met with at all seasons, or rather, that most prolific of all gardens, Covent Garden, is never entirely without these things, and probably many more, only the wide sources from which these supplies are drawn renders it impossible for any one "private garden" to compete with them.

The necessary condition for keeping Apples is a cool and pure atmosphere, free from stagnant moisture, yet not dry, for, in fact, a certain amount of moisture is beneficial rather than otherwise, only it ought not to be contaminated with the vapours which the loaded shelves too often exhale. This is only removed by copious ventilation, and for this reason a fruit-room ought to be lofty, and the shelves sufficiently apart to allow that due circulation of air, without which preservation to any great extent must be looked for in vain.

We are far from certain whether broad, close shelves, only one foot apart, as we have seen some, are not absolutely worse than laying the fruit thicker on shelves admitting a more free current of air through them. In this point, as well as that of having the fruit-room lofty, I am borne out by the practice of many of the Kentish farmers, whose keeping-apples are mostly stowed away in their hop-kilns, which are either conical or pyramidal structures, whose bottom is some eight or ten feet above the ground-level; and the cone, or pyramid, being "steep-pitched," as builders term it, the apex is surmounted by a cowl of about two feet or a yard in diameter, thereby giving every opportunity for all impurities in the air to pass off at the top, which, no doubt, serves an admirable part at the time the apples are stored there, by feeding the interior with pure air, to replace that carried off at top as it becomes vitiated; fire-heat, of course, is dispensed with, and no covering put over the fruit until very severe weather renders it necessary. Now, when it is considered that the fruit often lies in these kilns in a body two feet thick, and turns out in excellent order at a late period, it would seem that the so-much urged proposition of laying them thin, or even singly on shelves, was, after all, a piece of pedantry; yet such is not the case. If those fruits that lay in such heaps over the well-ventilated hop-kiln had been lying singly there, they would probably have kept much longer; but as it is, the most important points to their preservation were kept in view in the thorough top-ventilation which the nature of the building afforded; ventilation, perhaps, more perfect than in many structures where that object is specially attempted, because the inner surface of the cone forming the kiln being smooth and free from any of those impediments which check the upward current of air, whatever gaseous impurities are generated in the interior are carried off at top by the admission of a purer fluid below; the nature of the building being such as to encourage such a draught, there is less wonder at the good keeping of the fruit inside; consequently, we may, from that, take a lesson, and, comparing it with most ordinary fruit-rooms, let us see in how much they differ.

In very many gardens, the store-room for the keeping of winter fruits is placed against some portion of the garden wall, often the north one, and possibly is considered very good indeed, if it be ceiled, and have the luxury of a window that will open to admit air. Now, it very often happens, that this window is small, and does not extend to the top or ceiling of the room, and there is often no other outlet for the impurities which generate there; consequently, the upper portion of the room is a sort of repository for all these volatile impurities, which, being lighter than common air, float there, their grosser parts being only removed by the admission of fresh air in at the window, and the consequent withdrawal

of a certain portion out; but it requires very little reasoning to prove how short this comes of the hop-kiln, in respect to thorough ventilation. Now, though it may be asserted that Apples will keep tolerably well in a cellar, where the atmosphere being cooled down to several degrees below the ordinary level outside, the decaying powers are, to a considerable extent, arrested; hence, the preservation is more due to the absence of decaying influence by mechanical means than to any benefit accruing to the fruits by the position in which they are placed; besides which, a sojourn too long in such a place necessarily deprives them of those sugary juices which can only be imparted to fruit that enjoy a little, more or less, of the warmth of the season. It is, therefore, on these principles, that small fruits, after being kept some time in the cold air of our ice-house, generally lose their flavour, and present little more than the appearance of what they once were; certainly, such fruits as Melons, which contain a larger proportion of sugary matter than many other fruits, by being placed in a warm medium after they are brought out of a cold one, regain, to a certain extent, the flavour which seemed latent while they were enduring the cooling-down process.

Now, our readers will easily see, that the conditions we think most essential to the well preservation of our winter fruits, are, first of all, a cool, yet well-ventilated room, and not to be too crowded by the fittings; but, while we are recommending currents of air driven through at all favourable times, we would have these ventilators so contrived as to deny the admission of a large influx of outside air at a time when it is too warm or too moist; while, for Apples and Pears, we would supply them with the cold chilly air of a clear frost, and admit the north wind in at all times and in the greatest abundance.

J. ROBSON.

CULTIVATION OF WHEAT.

OF all our grain products Wheat is the most valuable, not only on account of its being required to furnish that most important article, bread, as food for the people, but by reason also of its being the most rent-paying crop of the farmer, and, upon many well-managed soils, it forms the most important, and almost the only kind of grain grown for the purpose of sale.

One of the most striking features in Wheat cultivation is its almost universal adaptation as a farm produce; for under a system of cultivation suited to the soil and situation, Wheat may be grown upon almost every kind of soil usually found under tillage, the nature of the climate alone being the chief obstacle to the growth of the crop.

I do not propose, as is too often the case, to write a few general observations and rules known to be best adapted for the cultivation of this crop upon soils in general, as this is apt to confuse the uninformed, and render it difficult for them to distinguish which method of tillage, manuring, &c. is most desirable upon certain soils, in connection with the ever-varying seasons and circumstances with which they have to contend. It is rather my intention to treat the subject as applied to the different soils under cultivation, and in separate divisions, viz.,—first, the cultivation of Wheat upon heavy clay land; second, upon good loamy land; third, upon sand and gravel; and fourth, upon dry chalk soils.

The first division of my subject relates to the ma-

nagement and tillage for the crop, upon *heavy*, or, what is commonly termed *Wheat land*, and no doubt this denomination originated in the fact, that formerly, no other crop of any importance was grown upon this description of soil; but since the introduction of root crops, and their extensive use in the feeding of sheep and cattle, this soil has been made to contribute largely to the supply of fat stock, and the production, proportionably, of larger crops of Wheat, Oats, Beans, &c. The successful cultivation of clay soils cannot be carried out unless drainage has been executed efficiently where required, for in most instances they will be greatly benefited thereby. The first object to be attained is a good fallow, either a winter and summer (commonly called the long fallow), or otherwise, the short or winter fallow, as a preparation for green crops; the object of the fallow, or fallow crop being for the purpose of cleaning and deepening the soil by tillage. After the fallow, the next point of importance is the rotation, or course of cropping. The old method, and one which is now nearly obsolete, was to sow the Wheat after fallow, followed by Oats, and then Clover, which completed the rotation; that rotation has, however, given way to the following:—First year, long fallow; second, Wheat, seeded to Clover; third, Clover; fourth, Oats, Beans, and Peas, and the latter rotation, it must be admitted, is preferable to the former; but the most advantageous and improved rotation, in all cases where the land has been previously in fair condition, is to make a short fallow, and sow with Swedes, early Turnips, Mangold, &c., part being sown with Tares, and summer fed by sheep. Second year, Oats, and Barley seeded to Clover. Third year, Clover. Fourth year, Wheat out of Ley. Fifth year, Winter Beans and Peas. Sixth year, Wheat. This concludes the rotation most approved by myself, and here introduced to notice for the purpose of shewing how much the preparation of land for Wheat upon this soil will vary according to the course of cropping adopted.

I will now proceed to describe the usual method of making the long fallow, as named in the second course of cropping. Commence the fallow, or first ploughing, in October or November, with a furrow not less than seven or eight inches in depth; strike out water-furrows, and make them out with the spade, it will then lay dry, and should be allowed to remain until the first dry weather in the spring, and when the grass and weeds begin to appear, then give the second ploughing, turning back the old furrow the same depth as before.

After the land has remained, and received the benefit of the alternate changes of weather for several weeks, do not harrow the land as it is usual to do, but proceed to plough, the third time crossways, the same depth as before; the advantage of this will be in getting the land loose and hollow, and making it quite level, after being worked with the drags, harrows, &c., and these are the two most important points in summer-fallowing, the action of the harrows, roller, &c. in the after tillage, being so much more effective. The land, after being made quite fine, may then be left for several weeks,

until the grass and weeds are quite dead. In case the weather is showery, and the grass and weeds do not die readily, remove, or burn them, and proceed to give the fourth ploughing crossways, and use the harrows, roller, &c. as before, taking care either to remove or destroy all the grass and weeds which might have come to the surface. When yard or town manure is applied, it is best to cart it on the land previous to the fourth ploughing, if the fallow is sufficiently forward and clean; but that seldom being the case, it is usual to lay it on the land, and spread it previously to the last, or ridge ploughing, which should be done deep enough to bury the manure. In making up the ridges upon heavy clay soils, the five turn is the best size, being about eight feet in width; this will allow the drill to take one ridge at a time, the wheels going in the furrows; the horses, also, can walk in the furrows, and both drill and harrow in the seed without treading the land.

JOSEPH BLUNDELL.

(To be continued.)

THE POOR WIDOW.

By the Authoress of "*My Flowers*."

Nor very far from "the rich widow's" house there is a back lane, which ends with wooden-doors, that shut in some private yard or enclosure. The lane on one side is bounded by a hedge, on the other by the backs of cottages, one of which is a pitfall of Satan, from which loud voices, tobacco smoke, and fumes of beer, often proceed. Quite at the end of the lane, close to the wooden-doors, there is an outhouse fixed against the gable of a respectable cottage on the open side of the lane. This outhouse, stuck together with little better materials than brickbats and boards, is divided into two little bits of holes called rooms. They were once a wood-house and coal-hole, but are now called "a cottage," and in it dwells a "poor widow," but one "rich in faith, and an heir of the kingdom which God hath promised to them that love him."

Do my readers remember the "upper chamber" where the poor lock-shutter languished on the bed of suffering? Well, this poor widow was his devoted wife. He died, and left her in complete destitution, with nothing but a few articles of furniture, and a little rick of rough, water-side hay. The Board of Guardians would give no relief while she had a thing left that could be called *property*, and, therefore, until this poor rick was sold, she starved as comfortably as she could. But it pleased her Heavenly helper to bring her a purchaser very quickly, and he gave her just as much money as she owed at the shop. When her debt was paid, she could fairly say she had nothing, and then the parish pay began—a loaf of bread a week, and one shilling. She was obliged to accept the affectionate offer of a sister and brother-in-law to live with them in a neighbouring town; but they were kept poor by an expensive family, and the widow felt herself an incumbrance to them, for her pittance was barely enough for herself, and her health so broken, that she could do nothing for her support, or to make a return to them. Her heart, too, pined after her native village, and the neighbours she knew and loved; and after deep consideration, and earnest prayer, she began to turn her mind towards the possibility of getting back there again.

This outhouse was a tempting refuge for one who longed for some spot in which to lay her head, and yet had nothing to rent a cottage with. Sixpence a week, she thought, might be managed, and the blessedness of a home of her own, and in the place where she was born, and where her husband and child lay buried, and the possibility of doing some little good to the sick and afflicted round her—these things all pressed so heavily against the spring of prudence, that at last it gave way, and the widow settled herself under

this wretched little roof, to try how things will speed with her.

Go when you will, she is seated with a book in her hand—either the Scriptures, or a hymn book, or Bunyan's Holy War, or a tract. In the first room, so called, there she sits, in a close, crimped cap, the pink of cleanliness, with a table, two old-fashioned chairs, a small set of shelves, with a few plates, and tea-things upon them, a tiny cupboard with her loaf in it, a kettle, a saucepan, and a broom. The inner apartment you enter by a low door, and a very high step, so that the thin ceiling touches your head, and a little square of glass shows you that there is scarcely room to stand between the wall and the bed. Light, however, peeps in from between the brick-work, and damp settles upon every thing, just as it does in a coal-shed. The widow has made a strip of matting, which keeps her feet from the damp bricks, but the whole tenement is so damp and cold, that it drove away an aged spinster last winter, and how the widow will "win through" the one that is approaching seems uncertain.

Her delight is to go and visit the sick; and the joy with which she takes them a cup of tea, or any little scrap from her own cupboard, is quite delightful to see. Sometimes she contrives a little apple-dumpling, and then she goes with a bit covered up to a poor sick man in a neighbouring cottage, with a benevolence of heart, and swelling of the breast that a queen might sigh for. She goes to read and speak comfortably to those for whom she has nothing else; and she speaks a word of exhortation to those who know not the Lord. Her desire is to glorify God in all things,—and to hear her speak, and to mark her little knowledge, one cannot but confess that she has been taught of God.

It is remarkable the way in which the poor and unlearned discourse about spiritual things. The educated christian speaks well, and scripturally, and declares the very same truths as his humble neighbour; but from the poor man's lips they come with peculiar unction; there is something in the way he sets them forth that the educated man cannot attain to. Nobody will understand this but those who have listened to them; it is very strange; but scriptural discourse has double power when proceeding from a simple, uncultivated mind.

The widow's principal business is to cheer poor William Adams under his pains and trials. She often sits by his side, when he can bear to be talked to, and lifts him up by her powerful words. Her energy and fervour is great, and he says, it is most encouraging and reviving to him to listen to her conversation. She has had long and deep experience herself, and therefore she can minister help and consolation to all sorts and conditions of men; and when christians have nothing else to give, they do not go to their afflicted brethren empty handed if they take with them a word in season to those that are weary.

Readers! which is the happiest? the rich widow, or the poor one? What is it that makes the rose-covered cottage dull; and the coal-shed bright with light?

It is a beautiful sight to see a poor, and aged, and infirm, and tottering, Christian "going about," like our Great Example, "doing good;" ministering, to the utmost of her ability, to those who have certainly not less of this world's goods than herself; and, in some cases, much more. But kindness, sympathy, exhortation, correction, and reproof, as occasion offers, are christian duties, and christian pleasures, and it needs nothing but the heart set aright to fulfil them.

The poor widow has a heart brimming over with love and gratitude to a covenant God, who has led her through a howling wilderness, "in the daytime with a cloud, and all the night with a light of fire." She has not forgotten "his works and his wonders" that he showed her; and her pleasure now is to "keep his covenant and walk in his law."

This is real happiness; even amidst poverty, infirmity, and age. This is to seek rest and to find it.

Readers! You cannot live in a much worse place than a coal-shed; you cannot be much poorer than this poor widow. "Go, and do likewise."

ALLOTMENT FARMING.—OCTOBER.

How many reminiscences of the past—how many anticipations of the future—rush into the mind, when we, in a musing mood, estimate our position, and find ourselves on the edge of OLD OCTOBER. We very naturally thus soliloquise:—Is the summer really gone; and are we so fast approaching the edge of winter? Are we prepared for that gloomy period, when it is vain to look for the fruits of the earth, or for sustenance out-doors? Have we done all we could, in the spirit of prudent forecast, to secure a winter's supply of roots and vegetables, to eke out more expensive affairs; and to add change and variety to the winter's repast?

These are grave questions, at this period, to those for whom our labours are intended; and, indeed, they concern every one who cultivates land, whether a score poles, or a hundred acres. In these days, more especially, do such considerations press with unusual weight, for the prospect before us is strange enough to attract extra attention in an unusual degree. The Potato disease, so virulent as well nigh to threaten an utter extermination of that invaluable root; bread-stuffs of all kind dear, and likely to rise higher; flesh meat up to war prices again; and, indeed, everything pertaining to dietary matters high in the market, and having a tendency to rise. Added to this, at the time I write, much difficulty in securing the later harvest, both as regards weather, and the labour question. By-the-by, the latter will soon become the question of the day, if emigration proceeds at the ratio of the last twelvemonths or so; if, with some tens of thousands of Irish labourers, there is much ado to secure our harvests, what shall be the case, if not only these men emigrate, but a "drain" commences on the very sinews of old England? Surely, the day is at hand, when the policy, propriety, shall I add, necessity, of attaching our labourers to the soil which bred them, by adding a quarter-of-an-acre of good soil to every cottage must be considered. However, let us cast our eyes over our crops, and leave these things to our rulers, who, thanks to God, are tolerably alive in these days to the interests of the masses.

POTATOES.—In these parts, I am sorry to report, the disease is worse than it was in its earlier visitations. It is, indeed, fearful, doubtless rendered doubly virulent through the immense quantity of rain, and general humidity and shade of the atmosphere. The whole system of the plant has been for weeks disturbed with half-elaborated sap. This could not, under present circumstances, but lead to increased disease. And what must we do? it will be asked. To which I answer, No man can say decidedly. I verily had thought that planting early, on land not fresh manured, taking them up before the tuber was affected, and strewing them thinly on the dry floor for a fortnight, would prevent or arrest the disease. And such a course, last autumn, was crowned with the most complete success in my case; so much so, as quite to astonish parties aware of the circumstances. I am sorry to say, however, that such has not been the case up to this time; out of two or three sorts thus treated, I have lost some forty per cent. at least.

I remember once reading a tale of a man, who bet a wager, that he would get a hundred receipts for the tooth-ache within an hour. He took a seat on (I think) old London-bridge, and commenced making wry faces, and uttering agonising cries, and, verily, recipes poured in on him from all sides—he won easily. And so with our Potato disease. A man on a journey may soon collect a hundred recipes. I met a grave-looking person the other day, at a railway station, who fairly begged of me to try the effect of pitting them the moment they were taken up; he assured me that two years successively, last and this, he had done so, covering the pit or "hog" with nine inches of soil. Now this was done with the kind known in these parts as "the Radicals," than which none have decayed worse during the last two or three years. He assured me, that he opened a pit last week, which had been thus covered for six weeks, and that scarcely one was decayed. His maxim is, *exclusion of air* by all possible means; and, in order to prove this point, I have selected a dozen potatoes, equal in all respects; six I have put in a bottle, sealed; and six I have laid on a shelf in the shed. Strange it is, that one party so strongly advocates thorough exposure to the air, drying, and even

greening; whilst another as strongly advocates just the reverse. I am this day (September 17th) covering a floor with Potatoes taken up yesterday, and I am going to smother them with fresh-burnt wood ashes, as an experiment.

I may here again recommend caution and care in the selection and preservation of seed for the ensuing year. There are those who say it is as well to plant from diseased seed, but both science and common sense are averse to such a procedure.

STORING ROOTS IN GENERAL.—By the end of the month, Carrots and Mangold must be stored; indeed, Carrots probably sooner, especially if the grub has been busy. A dry period should by all means be chosen. The Carrot tops are valuable food for either cow or pig, and should be used accordingly. They may be mowed or knifed down to within three inches of the crown, leaving the root to draw them by; and when taken up they may be cut into the quick, that is to say, a slice taken off the crown, to destroy or weaken the growing principle. These crowns may be mixed with boiling food for the fattening of store pigs. Now, both with regard to this and other store roots, it may again be observed, that to get them housed dry, and to keep them dry after, is the chief secret. If there be a considerable bulk of such roots, and house, shed, or cellar-room is scarce, they may be piled in a ridge, in any high and dry plot, and protected from frost. My practice is to select a plot of the kind behind a hedge, fence, or wall, where the sun seldom shines; and where, in drenching periods, wet can never lie. Here the various roots are piled in pyramids of about three feet at base by nearly four feet in height. On the ground, a little new and dry straw is laid, and the whole pyramid of roots, carefully placed, is also covered with new straw, and the whole is soiled over about two inches thick; the soil taken from the sides or base of the pyramids and cut to slope from the pyramid; this at once conducts away all rains.

In the beginning of December, six inches more soil may be added if the roots are to keep until spring; or, if more convenient, a good coating of litter may be strewed over. Thus, it will be found, that any of our store-roots will turn out in March and April quite fresh; the main features being dryness and as low a temperature as can be attained short of freezing the roots; albeit, a slight approach to this condition would do good rather than otherwise.

The weather being dry, when the roots are pulled, they may be thrown on the surface of the soil for three or four hours, and then they may be slightly scraped if much soil adheres to them; and this little ceremony, by causing the operator to move all the roots, performs a double operation; it turns them and dries the other side. They may be scraped, if necessary, with a piece of lath cut in proper form, but care should be taken not to wound them. Those who can pile such roots in out-houses, or anywhere in-doors, must take care that they do not become shrivelled; mere dryness will scarcely accomplish this; but if there be fire-heat, or the sun or light can act on the roots, they will speedily lose their virtues. They must, by all means, be kept dark, and the air excluded.

As for Parsnips, they are better left in the soil until the beginning of February, as we have oftentimes proved and stated. It is well, however, to cover their crowns when cut down slightly; and my practice is to spread the manure allowed to the succeeding crop over their surface, and to dig them out according as needed: they will keep, however, without shrivelling, two or three weeks, at least, on any cool and damp floor, always taking the precaution of throwing something over them to keep them dark, and to avert the action of the air; for every one surely must know that the conjoint influences of air and light changes the character of those portions of plants which have been formed beneath the surface of the soil.

SWEDES.—These will endure ordinary winters unprotected; but there is nothing like having these things under command at a moment's notice. It is awkward for the cottager's wife to have to combat with half-a-dozen inches of snow in order to get at some Swedes for her family, or for the hog. Moreover, they are not quite safe in the soil.

COLLECTING LEAVES, TOPS, &c.—Some of our modern cultivators advocate the cutting off the leaves of root crops whilst in the middle of their growth; this is extraordinary. Surely, the keen hunt after startling novelties in this age of

wonders sometimes bids defiance to common sense, to say nothing of the philosophic principles. As soon, however, as the least discoloration takes place in the lower leaves, there is little doubt that they may be at once removed without injury to the roots, and with a positive benefit to the cow or pig.

WINTER GREENS.—Little is needed now among these, but to clear them thoroughly, and to collect the lower leaves by system, as with the root crops. Those who wish for early sprouts to their Green Kale or Brussels Sprouts, may top some of the strongest in the beginning of October. These will commence sprouting this autumn, and will grow during all mild winter weather. The *Cabbage* plants, from sowings in the early part of August, should be pricked-out, three inches apart, in the early part of the month, but not on rich soil. A little of the burnt matter of the weed heap will be a good dressing. If the soil is rich, they get "winter proud," and suffer much from frost in consequence.

And now, the ground being relieved of its root-crops, let me strenuously advise that every spare plot be ridged up to mellow. This is so important a procedure, that, were I a proprietor of allotments, I should, although unwilling to dictate, insist on the practice for the sake of those who held the land. If any plots are sour, or too adhesive, a good opportunity will occur of spreading cinder, or other ashes, lime rubbish, road scrapings, &c. These will work an important change for spring cropping. The end of October, too, is a period highly eligible to prosecute drainage matters, and the landlord will do well, and discharge a high duty, by promoting such by all possible means. The manure-heap should now be seen to in earnest; let all weeds be collected, hedges clipped, road-sides, or wastes, skimmed of their weedy turf, if lawful, and all such matters charred. They may then be spread over the muck-heap, and the whole turned, broken, and mixed. The heap should be then piled in a ridge or mound, and, indeed, every pains taken to keep out the rains, which may be said to rob the poor man's muck heap of thirty per cent. annually. Let some, at least, of our readers try this plan, and report on it next year.

In conclusion; let all stagnant soils have old gutters opened or cleaned, and others made where necessary, before November comes on; it is over late to talk about these things in February. What with gold hunting, rumours of war, and a high amount of consumption, consequent on commercial prosperity, the approaching winter bids fair to be a trying one. Allotment men and cottagers will do well to strain every nerve now, in order, not only to keep out of the shopkeeper's hands, but, indeed, to have some saleable produce, if possible.

R. ERRINGTON.

APIARIAN'S CALENDAR—OCTOBER.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

VERY little requires either to be said or done respecting Bees this month, beyond seeing that each *stock* contains at least twenty pounds of honey; and that those that are not placed in a bee-house are well protected against wet. In those localities where *wasps* abound it will be right to contract the entrances of the hives, and to destroy their nests whenever discovered; for this purpose turpentine is best; its application being easy, and its effects certain.

NORTH ASPECT.—I have again received several reports favouring a north aspect; and not even one against it. Still, I feel quite sure that it will not do in *all* places.

CHLOROFORM.—I am obliged to "Ghyra" for his information on this point; and in reply to his query as to "the dusk" being the best time to operate, I should say, that if he intends to take all the honey, and join the Bees to another stock, it certainly would; but if he intends to take only part of the honey, noon would be the best time.

THE CULTURE OF A ROD OF GROUND.

OCTOBER.

IN my notes for September, I intimated that I should give a description how I prepared my land for my *Wheat-crop*, and how I sow the seed, &c. Supposing my ground intended for Wheat to be occupied with Potatoes or Man-gold-wurzel, these will, by the latter end of this month, be fit to take up, and, as soon as I have cleared them off, I draw my cultivator over the ground (a description of this implement is given in my notes for August), and cut up all the weeds, and rake them off, making it quite clean and level; and, having been previously well manured for the root-crops, it is in sufficient heart to receive the Wheat. This is all the preparation I make previous to sowing the seed. I then draw my lines eight inches apart with my driller, the full particulars of which I have given in my "Spade Husbandry," which is, in fact, nothing more than part of an old oak-bedstead, about five or six feet long, and some iron spikes fixed in for teeth, at eight inches apart, and two handles to draw it by, which answers the purpose as well as a more costly one, and what every cottager may contrive with very little trouble or expence. This simple implement I find equally useful for drawing lines for other crops as well as Wheat. Previously to my beginning to draw the lines, I first fix my garden line the whole length of the ground, and place the driller by the side of the line, and carefully draw the outside tooth close by the line, from one end of the ground to the other, in order that I may get the lines perfectly straight to start with; this being done, there is no further need of the line in drawing the driller across a second time, the outside tooth being placed in the last line drawn, and, if the ground be nicely even, they may be drawn quite straight, and there being eight teeth in the driller, a rod of ground, in this way, may be lined out in a very short time, each line being exactly eight inches apart, which, when the crop is growing, gives a very neat appearance, besides the great facility such a space gives for hoeing and keeping the crop clean, to what it does when they are sown almost half the space, besides being irregular. My land being of good quality, I have always found this distance quite close enough, besides sowing the seed tolerably thin. As soon as I have prepared my ground, as above stated, I proceed to dibble the holes exactly on the lines, about four or five inches apart, at the same time stepping between the lines so that I do not tread them out. I have a girl or woman to follow me, and drop two or three kernels into each hole, which is quite sufficient, provided the seed is good and can be kept free from vermin, &c. I prefer having a woman to drop that is well experienced in the practice, which is very important, as boys or girls are very apt to be careless, and put too much seed into each hole. By adopting the above plan, I find a great saving of seed, besides the advantage of getting an abundant crop. As soon as the dropping is finished, I rake the ground over well, that the seed may be properly covered. The way I prepare the seed is with a steep of common salt, of sufficient strength to swim an egg, and then sift some fresh-slaked lime on the seed when taken out of the steep, and stir it well, so that it is perfectly dry before being used. If the seed is not used directly, care must be taken that it does not lay on a heap, as it is apt to heat.

CABBAGES.—The first week in this month is the time I transplant my early *Battersca* Cabbages in the ground where they are intended to stand. The following is the plan I pursue: I put on a liberal quantity of manure, and dig it in a good depth; as soon as the land is dug over, I proceed to transplant the Cabbages in rows two feet apart, and fifteen inches apart in the rows. If a crop of winter Beans be desired to grow between the rows of Cabbages, a double row may be dibbled between every other two rows of Cabbages, at the same time the Cabbages are put in; or, if the long-pod Beans be preferred, they should be sown in February. The various methods I pursue, in growing crops with my Cabbages, I have given in my little work that I have previously mentioned.

Where **VEGETABLE MARROWS** are grown, and allowed to ripen, they should be cut this month, and stored in a dry, cool chamber; and, when frosty weather sets in, they should be protected with any covering that is most convenient. I

have previously noticed, in THE COTTAGE GARDENER, the value of this vegetable, as a substitute for the Potato; and from the almost total failure of the Potato-crop this season, I am every day more convinced of the importance of giving every possible attention to cultivate this valuable vegetable on a larger scale. I am much pleased with the experiments that I have made with them this season, and with the result of their produce, which is very abundant, although I took very little pains with them, merely digging holes on the level ground, in odd corners, and filling them with manure, and sowing the seed in a little mould on the top of the manure. I also grew them on my manure heaps. As they ripen, we are now using them as a substitute for the Potato, in the way I have previously described; and, in my humble opinion, they are not only an excellent substitute, but they are really a luxury. We have found the easiest method of cooking them is to cut them in quarters, and boil them with the peel on, as it is taken off after being boiled much easier than when raw, and saves a deal of time and trouble.

POTATOES.—From an experiment that I have made in leaving a portion of my Potatoes in the ground up to the present time, I find, in taking them up, there appears to be two or three at some roots perfectly free from the disease; and, from observations that I have made in other seasons, I have found those that remain sound up to this time will continue so, and be perfectly safe to store for the winter, and will be fit for seed the following spring.

PARSNIPS and CARROTS should be taken up the latter end of this month, and carefully stored for the winter. It is a good plan to pack them in layers, with sand, in a cool, dry shed.

Where MANGOLD WURZEL are grown, the end of this month is a proper time to take them up, as they are more liable to be injured by the frost than the Swedish Turnips. As soon as taken up, the tops should be cut off, not too close, and then laid in heaps, and covered well with straw and earth, so that they are quite safe from the frost.

Every opportunity should be taken to dig over the ground as it becomes vacant, and, where necessary, to trench or double dig it, and to let it stay in a rough state during the winter, that it may have the benefit of the frosts. It is very important that stiff clay-soils should be done in this way; it is wonderful the effect the frost has in improving such soils when so exposed.

JOHN SILLETT.

BREEDING FROM ONE-YEAR OLD FOWLS.

ANY information bearing on the question, whether it is advisable to breed from birds one-year-old or two-years-old will be interesting to many of your readers. If the chicks of birds one-year-old are more subject to "weakness of the legs" than those of older birds, certainly the latter are to be preferred; for though by the aid of medicines we may effect a cure, yet we must ever aim at prevention, and only when that has been neglected seek a cure. During the present season I have bred about 100 Shanghae chickens, almost all from birds of last year, but have had only one, a cockerel, affected with this complaint of the legs. He was let alone for some weeks, I, having in past years, got sick of doctoring; however, I determined at last to try cod liver oil, which has, apparently, completely cured him. It sometimes happens that through lying about much the limbs become likewise attacked with rheumatism—a free use of mustard-seed I have then found beneficial. After six years experience, I am inclined to prefer breeding from birds one-year-old.—WM. JNO. BEEBY, *Chaldon, near Coulsden, Surrey*

SPARAXIS.

BEING a constant reader of THE COTTAGE GARDENER, and feeling a deep interest in the object of its publication, I thought, seeing the list of *Sparaxis* contained in the number published last month rather incomplete, that, if the following one was worthy of insertion in your columns, the interest and amusement it might be the means of communicating to

some of your readers would amply repay me for the little trouble I had taken in writing it.

Sparaxis alba or *leucantha*.—It is almost white; there is a tinge of yellow in the centre of the flower; grows fifteen inches high.

S. bicolor.—Blackish-purple; and whitish-yellow centre.

S. bulbifera.—Beautiful golden-yellow; grows strong, and blooms abundantly.

S. carulea.—Slate-colour; yellow centre.

S. nigricans.—Black-purple, mottled with red; with yellow centre.

Pheasant's Eye.—White, with a yellow centre, surrounded with black; does not grow above nine inches high.

S. rosea punctata.—Rose coloured, mottled with white; yellow and black centre; a strong-growing and great bloomer.

S. tricolor.—The original variety, grown in the Channel Islands under this name, was of an orange-scarlet colour, with yellow and black centre; an exceedingly pretty variety. (Quite right.)

S. tricolor grandiflora.—The original variety was of the richest velvety crimson, with black and yellow centre, gorgeously to look at when blooming in masses; but they have grown and seeded so freely, and produced such an abundance of varieties, and of so many colours, that it would be impossible to describe them. I have seen them growing and flowering in the season of every hue and colour. I would refer you to any lover of flowers who has seen them on a fine sunshiny day for a description of them. I could hardly trust myself with the task.

S. tricolor crispa.—A peculiarly crumpled-leaved variety of *tricolor*, more peculiar than pretty, of a rich crimson colour, with black and yellow centre.

S. variabilis.—A very pretty rose-coloured variety, with bright yellow centre; the flowers do not expand so broadly as *tricolor grandiflora*.

S. versicolor.—Large light variety, with pale-yellow centre, and reddish colouring on the outside of the petals. A bold, strong-growing variety.

I have found and still find it very difficult to keep the varieties distinct. I have selected twenty or thirty varieties from the beds of *tricolor grandiflora*, some seasons, but have not found them, even under circumstances which were favourable to their general cultivation and flowering, keep true to colour. They sport much, and I have invariably observed, that the sport is from darker to lighter colours; which, I think, tends to establish the theory, that the darker coloured varieties are hybrids, and that the lighter ones are the original stock; *versicolor* and *bulbifera*, to wit.

CHAS. BD. SAUNDERS, *Cæsarean Nursery, Jersey*.

[We are indebted for the above account of some of the best seedling varieties of *Sparaxis* to one of the most celebrated growers of the tribe in Jersey, Mr. Saunders, of the Cæsarean Nurseries. The twenty-four varieties, which I mentioned as exceeding my powers of description, had come to me from the Cæsarean Nurseries through a London agent; and I am glad to find that Mr. Saunders takes the same view of his own seedlings. They richly deserve to be grown in masses, wherever the climate is suitable for them in the open air. With the ordinary contrivance of cold pits, lights, and mats, they can be grown in any part of this country just as well as they grow in the open gardens in Jersey, provided they are planted out in prepared beds, and not in pots, in the usual way. Here, in England, we have not one gardener out of twenty of our very first-rate men who understand the proper culture of a tithe of the very commonest bulbs. They even do not know their mere names. When I threw down the glove, and challenged the whole fraternity of blue-aprons, cabbage-men and all, I did expect to encounter an adversary here and there on the subject of bulbs, to keep up the interest and excitement inseparable from fair and respectable criticism, but hitherto all has gone on smoothly, and so I fear it will do all the way down to *Zephyranthes*. It was just the same, a few years ago, with a friend of mine, who wrote a popular description of Ferns; but now Ferns are ably treated of and discussed upon freely enough in all our periodicals, and I trust it may be the same with Bulbs also, for they deserve to be much better known than Ferns, or most tribes of plants, especially the section of half-hardy ones, to which this series is confined.

I was not aware that seedling varieties of *Sparaxis* turned

colour; and I suppose that those mentioned by Mr. Saunders are the most permanent. We had long been aware, however, that the scarlet and higher tints in *Gladioli* are but too apt to disappear in cross seedlings; and that our climate is less favourable to produce the higher colours; and that tallies with Mr. Saunders' experience in *Sparaxis*; but *versicolor* and *bulbifera* are certainly not the parents of *tricolor*, which is a Cape plant, which I have often received from thence; and I could always point it out from any other, in the dry state, from the white silky coats. All this breed are very liable to rot in pots unless they are well-covered in white sand, and shaken out of the soil the moment the leaves die down. I never could manage them well but in sandy peat when I had them in pots; but if they are grown in a frame, a light rich compost of sandy loam one-half or more, the rest peat and very rotten dung, or leaf-mould, suits them better, but the rotten dung must be at the bottom where the roots do not reach until the leaves are full-grown; the bed for them, and for all the smaller *Ixias* and allied bulbs, ought to be at least ten inches deep, and the bulbs to be covered no more than half-an-inch. The bulbs ought to be left in the bed during the rest of the season, though not in pots, and not to be disturbed as long as they flower well; the glass should be left over them while at rest with a little air at back and front; and every autumn, say early in September, the surface of the bed ought to be carefully scraped off down to the sand over the bulbs, and a fresh compost put on, then a good drenching of water that would saturate the bed through and through, which is not easily done without three or four applications. From the time of this watering, early in September, until the frost comes, the glass should be left off day and night that the bulbs may sprout without stimulus. It is of great consequence to get Irids in general, as well as *Amaryllids*, to move as early in the autumn as we can manage to do so; but we must not resort to any kind of forcing beyond soft warm water from a shallow pond.

There is no plant that requires to have the roots in advance of the top so much as a bulb, or suffers more from encouraging a leafy top to be in advance of the roots. When the world is wise enough to understand the benefits of a mild, uniform, bottom-heat of from five to ten degrees above the heat of the air at the same time, a system of underground pipes will be devised for the starting and steady autumnal growth of all the best winter growing bulbs.—D. B.]

GOLD FISH.

OBSERVING a communication in a late number of THE COTTAGE GARDENER on the subject of Gold Fish, I beg to state, for the benefit of those who may be desirous of keeping these pretty creatures, that they will live for months in a glass bowl, if regularly supplied with water, in which I suppose they find numerous animalculæ, invisible to us, but sufficient for their subsistence. They will, however, grow to a much larger size if in a pond or tank, and fed with bread crumbs, and small worms; indeed, they will eat almost anything, and will become exceedingly tame, so much so as to take their food from your hand quite fearlessly. Some years since, when in the India Service, I travelled over that interesting ridge of hills, like your correspondent, but was equally unfortunate with himself in being able to reach the Lake from which these fish were originally procured. Though now very plentiful in China, and sometimes of a large size, they are never used as an article of food. It is considered, indeed, quite sacrilegious to do so, as they are supposed to be the favourite food of their God Bhudda Bhudda, and any person selling them for that purpose in the street would be severely bastinadoed by their Tom fou, of Chinese police.

T. R., Dover Road.

BURY ST. EDMUND'S AND WEST SUFFOLK POULTRY SHOW.

THE first show of this Society, in connection with the Bury Horticultural Society, was held in the Abbey Grounds

and Botanic Garden, on the 13th, 14th, and 15th, when upwards of six hundred pens were occupied by choice specimens of poultry and pigeons. The weather was fine, and the attendance very large. The accommodations, both for visitors and poultry, were remarkably good, and much credit is due to the committee for their indefatigable exertions, and for which they received the individual thanks of many of the principal exhibitors.

The birds shown were fine. The *Shanghaes*, selected from the yards of some of the first amateur breeders in the kingdom, occupied 193 pens. The *Geese* and *Ducks* were also remarkably fine, and attracted great attention; perhaps their accommodation was not equal to that of their gallinaceous competitors, but this the committee will obviate another year.

Every bird was put into the basket of its owner on the evening of the day the Show closed, and those going by rail all sent off.

JUDGES:—John W. Nutt, Esq., London, late of York; J. H. Catling, Esq., King Street, Portman Square, London.

Class I.—SHANGHAE, CINNAMON AND BUFF.

6. First prize, Fairlie, J., Cheveley Park, Newmarket. Age, two-and-a-half years. 7. Second prize, Fairlie, J., Cheveley. Age, two-and-a-half years.

Class II.—SHANGHAE CHICKENS, CINNAMON AND BUFF.

104. First prize, Eason, John, 14, Lowther Arcade. Age, seven months. 108. Second prizes, Gilbert, H., 17, Upper Phillimore Place, Kensington. Age six months. 45. Fairlie, J., Cheveley Park. Age, six months. Highly Commended.—54. Punchard, C. Age, six months. 82. Fairlie, J. Age, six months. 105. Eason, John. 109. Gilbert, H., Kensington. Age, six months. 38. Sutton, F., Bury. Age, six-and-a-half to seven months. Highly commended for hens; cock deformed.

(This class highly meritorious.)

Class III.—SHANGHAE, BROWN & PARTRIDGE-FEATHERED.

3. First prize, Fairlie, J. Age, two-and-a-half years. 5. Second prize, Punchard, C. Exceeding one year.

Class IV.—SHANGHAE CHICKENS, BROWN AND PARTRIDGE-FEATHERED.

8. First prize, Fairlie, J. Age, five months. 7. Second prize, Fairlie, J. Age, six months. 17. Highly commended, Hall, J., Haverhill. Age, four months.

Class V.—SHANGHAE—WHITE.

1. First prize, Fairlie, J. Age twenty months. 2. Second prize, Reynolds, W. C., Yarmouth. Above one year.

Class VI.—SHANGHAE CHICKENS—WHITE.

13. First prize, Fairhead, T. B., Cressing. Age, six months. 1. Second prize, Rawson, C. Hatched April 30, 1853.

Class VII.—SHANGHAE—BLACK.

1. First prize, Fox, P. H., London. Ages various. 2. Second prize, Fairlie, J. Age twenty months.

Class VIII.—SHANGHAE CHICKENS—BLACK.

3. First prize, Fairlie, J. Age, six months. 7. Second prize, Preston, E. H. L., Yarmouth. Hatched April 26.

Class IX.—DORKING—COLOURED.

5. First prize, Astley, Hon. Mrs. Age, two years. 8. Second prize, Fairlie, J. Age, two years.

Class X.—DORKING CHICKENS—COLOURED.

13. First prize, Potts, T., Kingswood Lodge, Croydon. Age, three weeks. 11. Second prize, Gurdon, Rev. P., Cranworth Rectory, Shipdham. Age, six months.

Class XII.—DORKING CHICKENS—WHITE.

2. First prize, Benyon, Rev. E. R., Culford Hall. Age, four months.

Class XIII.—SPANISH.

2. First prize, Fox, T. H., 44, Skinner-street, London. Age, various. 3. Second prize, Fox, T. H., 44, Skinner-street, London. Age, various.

Class XIV.—SPANISH CHICKENS.

2. First prize, Cooke, C., Rushford, Thetford. Age, eighteen weeks. 1. Second prize, Rawson, C. Hatched April, 1853.

Class XV.—MALAY.

5. First prize, Olle, F., Bury St. Edmund's. Age, sixteen months. 6. Second prize, Crick, W., 23, Warner-place, South Hackney-road, London. Age, eighteen months.

Class XVI.—MALAY CHICKENS.

1. First prize, Crick, W., 23, Warner-place, South Hackney-road, London. Age, fourteen months.

Class XVII.—GAME FOWL.

2. First prize, Monsey, J., Norwich. Age, twelve months. 4. Second prize, Ellis, G., Bury St. Edmund's.

Class XVIII.—GAME CHICKENS.

3. First prize, Ellis, G., Bury. Hatched April, 1853. 2. Second prize, Ellis, G., Bury St. Edmund's. Hatched April, 1853.

Class XIX.—GOLDEN-PENCILLED HAMBURGH.

3. Fellows, T. L., Beighton Rectory, Acle, Norfolk. Age, exceeding two years. 4. Second prize, Dutton, J., Bury St. Edmund's. Age, two years.

Class XX.—GOLDEN-PENCILLED HAMBURGH CHICKENS.

5. First prize, Freeman, F. W., Stowmarket. Hatched April 8, 1853. 4. Second prize, Fellows, T. L., Beighton Rectory, Acle, Norfolk. Age, five months.

Class XXIII.—SILVER-PENCILLED HAMBURGH.

3. First prize, Astley, Hon. Mrs., Swanton House, Thetford. Age, two years. 4. Second prize, Fellowes, T. L., Beighton Rectory, Acle, Norfolk. Age, exceeding one year.

Class XXIV.—SILVER-PENCILLED HAMBURGH CHICKENS.

6. First prize, Freeman, F. W., Stowmarket. Hatched April 13, 1853. 4. Second prize, Astley, Hon. Mrs., Swanton House, Thetford. Age, four months.

Class XXV.—SILVER-SPANGLED HAMBURGH.

2. First prize, M'Cann, T., Graham House, Malvern. Age, not known. 1. Second prize, Rawson, C. Aged.

Class XXVI.—SILVER-SPANGLED HAMBURGH CHICKENS.

1. First prize, Rawson, C. Hatched April, 1853. 2. Second prize, Fellowes, T. L., Beighton Rectory, Acle, Norfolk. Age, four months.

Class XXVII.—POLAND FOWL—BLACK, WITH WHITE CRESTS.

1. First prize, Rawson, C. Hatched 1852. 2. Second prize, Gilbert, Rev. C., Bramerton Lodge, Norwich. Age, fifteen months.

Class XXVIII.—POLAND CHICKENS—BLACK, WITH WHITE CRESTS.

3. First prize, Howe, R. S., Palgrave, Norfolk. Age, ten months. 1. Second prize, Rawson, C. Hatched April, 1853.

Class XXIX.—POLAND FOWL—GOLDEN.

1. First prize, Rawson, C. Aged.

Class XXX.—POLAND CHICKENS—GOLDEN.

2. First prize, Roper, Mrs., Croxton Park, Thetford. Age, five months. 1. Second prize, Rawson, C. Hatched July, 1853.

Class XXXI.—POLAND FOWL—SILVER.

3. First prize, Potts, T., Kingswood Lodge, Croydon. Age, various. 1. Second prize, Rawson, C. Aged.

Class XXXIII.—BANTAMS—GOLDEN, LACED, OR PENCILLED.

13. First prize, Palmer, H. D., Great Yarmouth. Age, two years. 2. Second prize, Rawson, C. Aged.

Class XXXIV.—BANTAMS—SILVER-LACED OR PENCILLED.

3. First prize, Monsey, J., Norwich. Age, eighteen months. 2. Second prize, Fairlie, J., Cheveley Park, Newmarket. Full grown.

Class XXXV.—BANTAMS—BLACK.

4. First prize, Legge, T., Bury St. Edmund's. Age, one year. 10. Second prize, Monsey, J., Norwich. Age, eighteen months.

(This class meritorious.)

Class XXXVI.—BANTAMS—WHITE, OR ANY OTHER COLOURS.

6. First prize, Astley, Hon. Mrs., Swanton House, Thetford. White. Age, two years. 13. Second prize, Banfield, H., Ixworth. Nankeen. Age, over one year.

Class XXXVII.—GEESE.

1. First prize, Rawson, C. Aged. 5. Second prize, Fairlie, J., Cheveley Park, Newmarket. Full grown.

Class XXXVIII.—DUCKS—WHITE AYLESBURY.

2. First prize, Bryan, J. M., Ingress House. Age, sixteen weeks. 3. Second prize, Bryan, J. M. Age, sixteen weeks.

(This class meritorious.)

Class XXXIX.—DUCKS—ROUEN.

9. First prize, Roper, C., Croxton Park, Thetford. Age, nine weeks. 2. Second prize, Fairlie, J., Cheveley Park, Newmarket.

Class XL.—DUCKS—ANY OTHER VARIETY.

3. First prize, Fairlie, J., Cheveley Park, Newmarket. Muscovy. Age, six months. 4. Second prize, Fairlie, J. Black Bomlay. Age, six months.

Class XLI.—TURKEYS.

2. First prize, Fairlie, J., Cheveley Park, Newmarket. Age, eighteen months. 3. Second prize, Fairlie, J. Age, sixteen months.

Class XLII.—TURKEY POULTS.

1. First prize, Fairlie, J., Cheveley Park, Newmarket. Hatched 1853. Age, six months. 7. Second prize, Ruse, R., Kentford, Suffolk. Age, four months. 8. Goldsmith, T., Ixworth. (Norfolk.) Age, five months.

(This class meritorious.)

Class XLIII.—GUINEA FOWL.

1. First prize, Fairlie, J., Cheveley Park, Newmarket. Age, two years. 2. Second prize, Fairlie, J. White. Age, eighteen months.

Class XLIV.—PIGEONS.

Prizes.—1. Rawson, C. Carriers. 2. Ditto. Owls. Aged. 5. Ditto. Fantails. Aged. 12. Playford, J., Great Yarmouth. Mottled Tumblers. 15. Nice, T., Great Bradley Hall, Newmarket. Jacobins. Aged. 20. Everard, E. H., Bury. Nuns. Age, one year. 28. Woods, W., 26, Park Place, Kennington Cross, Surrey. Almond Tumblers. Age, two years. 30. Ditto. Blue Turbits. Age, two years. 34. Ditto. Silver Bald Heads.

EXTRA CLASS.

12. First prize, Potts, T., Kingswood Lodge, Croydon. White Poland. Age, various. 9. Second prize, Fairlie, J. Bramah Pontas. Age, six months. Prizes.—22. Brown, G. J. E., Tostock House. Half-bred Dorking and Cochlin. Age, four-and-a-half months. 26. Turner, H., Bury St. Edmund's. Half-bred Cochlin and Dorking. Age, cock two years, hens one year. 31. Taylor, J., jun., Cressy House. Shepherd's Bush, London. Black Andalusia. 34. Wallace, Rev. W., Thorpe, Abbots Seale. Shanghae (Cinnamon).

HOLMFIRTH POULTRY SHOW.

(From a Correspondent.)

THE Poultry Show, recently held at Holmfirth, was, so far as the efforts of man were available, a successful one; the weather, however, was most unpropitious. With the Flower show, held under spacious tents in the same field, and described as really a most creditable one, as well as with the sheep, pigs, horses, &c., also exhibited, we have nothing, at present, to do. Though generally averse to laudatory notices, from such being made too common, and not always well-earned, it is a satisfaction, and but common justice, to state, that the spirit and exertion of the president and committee called forth, from all who visited the show, expressions of great satisfaction with all the arrangements. And when it is stated that this was the first general or open show established at Holmfirth, the credit is the greater.

The first pen of *Buff Shanghaes* were decidedly good birds; whilst the three prize pens, as well as the commended birds, in Chickens, were very superior. The other classes, however, were not worthy of special mention. Mr. Floyd's (the president) *Spanish* were excellent; and it may be stated, that all the other classes were represented by very fair specimens. The *Sebright Bantams* (silver), were especially commended as first-rate birds by the judges, and were purchased by one of them. It would be well if the judges at Birmingham would follow the example set at Holmfirth, where there was a notification on the pen, by the judges themselves, that certain *Black Polands* were disqualified, for the *fraud* practised in pulling or cutting off the black feathers from the front of the topknot.

The *Turkeys*, *Geese*, and *Ducks*, were good; the *Ducks* especially so.

The judges were Dr. Horner, of Hull, and Mr. Travis, of York.

The Cottager's classes were rather unequal in merit. The *Spangled Hamburgs*, as well as the *Pencilled*, contained numerous and good specimens. There were, also, some good *Game Fowls*, and one good pen of black *Spanish Chickens*.

The following is a list of the awards made by the judges.

Cochin-China (cinnamon and buff) cock and two hens.—First, Robert Carr, Wortley-hall, Sheffield; second, T. P. Crosland, Esq., Gledholt. Seven entries.

Three *Cochin-China chickens*.—First, Ralph Goodall, Heckmondwike; second, E. C. Hopps, Whitehill, Heaton Norris, Stockport. *Highly commended*, George Hatfield, Spring-gardens, Doncaster. Twenty-seven entries.

Cochin-China (brown and partridge-feathered) cock and two hens.—First, C. L. Clare, Hindley House, Liverpool. Three entries.

Cochin-China (white) cock and two hens.—First, C. S. Floyd, Sands. Two entries.

Three *Cochin-China chickens*.—First and second, C. S. Floyd, Sands. Three entries.

Three *Cochin-China chickens* (black) cock and two hens.—Second, C. S. Floyd, Sands. Three entries.

Malay cock and two hens.—Second, James Dixon, Bradford. Two entries.

Spanish cock and two hens.—First, C. S. Floyd, Sands; second, Henry Tinker, Scholes. Five entries.

Three *Spanish chickens*.—First, V. W. Corbutt, Huthwaite, Thurgoland; second, Richard Battye, Holmfirth. Six entries.

Dorking (coloured) cock and two hens.—First, James Dixon, Bradford; second, C. L. Clare, Hindley House, Liverpool. Six entries.

Three *Dorking chickens* (coloured).—First, C. L. Clare, Hindley House, Liverpool. Two entries.

Golden Pheasant cock and two hens.—First and second, James Dixon, Bradford. Seven entries.

Three *Golden Pheasant chickens*.—First and second, M. H. Broadbent, Stubbin, Holmfirth. Six entries.

Silver Pheasant cock and two hens.—First and second, Charles Taylor, Greave, Meltham. Four entries.

Three *Silver Pheasant chickens*.—First, Ralph Carter, Upperthong; second, Charles Taylor, Greave, Meltham. Five entries.

Chittaprat cock and two hens.—First, James Dixon, Bradford; second, M. H. Broadhead, Stubbin, Holmfirth. Five entries.

Three *Chittaprat chickens*.—First, Ralph Carter, Upperthong; second, M. H. Broadhead, Stubbin. Five entries.

Game (black-breasted and other reds) cock and two hens.—First, Joseph Mellor, Thongsbridge; second, Henry Tinker, Scholes. Four entries.

Three *Game chickens* (same).—First, Alfred Gillet, Steps-mill. One entry.

Game (blacks and brassy-winged, except greys) cock and two hens.—First, Henry Brooke, Beech-place; second, G. H. Hinchliff, The Nab. Two entries.

Game (white and piles) cock and two hens.—First, W. L. Brook, Meltham Hall; second, Henry Brooke, Beech Place. Two entries.

Three *Game chickens* (same).—First, G. H. Hinchliff, The Nab; second, Henry Brooke, Beech Place. Two entries.

Game (duckwings and other greys and blues) cock and two hens.—First, Henry Brooke, Beech Place; second, G. H. Hinchliff, The Nab. Three entries.

Poland (Golden) cock and two hens. First, John Dransfield, Penistone. Three entries.

Three *Poland chickens* (same).—Second, J. F. Moorhouse, Scholes. Three entries.

Poland (Silver) cock and two hens.—First, James Dixon, Bradford. One entry.

Poland (black, with white crests) cock and two hens.—First, George Lockwood, Dyke End, Huddersfield. Three entries.

Three *Poland chickens* (same).—First, George Lockwood, Dyke End, Huddersfield; second, Thomas Battye, Brownhill. Two entries.

Poland (white) cock and two hens.—Second, Henry Tinker, Scholes. Two entries.

Three *Poland chickens* (same).—First, Jonathan Roberts, Cross; second, Henry Tinker, Scholes. Three entries.

Cock and two hens of *any other distinct breed*.—First, H. Geissler, Kirkburton. One entry.

Gold-laced Bantams, cock and two hens.—Second, John Mellor, Thongsbridge. Two entries.

Silver-laced Bantams, cock and two hens.—First and second, C. S. Floyd, Sands. Four entries.

White Bantams, cock and two hens.—First, Thomas Hinchliff, Netherhouse; second, Henry Brooke, Beech Place. Five entries.

Blue Bantams, cock and two hens.—First and second, James Dixon, Bradford. Two entries.

Bantams, of any other variety, cock and two hens.—First, H. Geissler, Kirkburton; second, Richard Battye, Holmfirth. Four entries.

Best cock, of any breed.—First, G. H. Hinchliff, The Nab; second, John Burton, Shaley House. Nine entries.

Best hen, of any breed.—First, James Dixon, Bradford; second, C. S. Floyd, Sands. Fifteen entries.

Best cockerel, of any breed, hatched in 1853.—First, Enoch Oldfield, Netherton; second, C. S. Floyd, Sands. Six entries.

Best pullet, of any breed, hatched in 1853.—First, Geo. Hatfield, Spring Gardens, Doncaster; second, C. S. Floyd, Sands. Eight entries.

Three *Guineo fowls*.—First and second, Ralph Carter, Upperthong. Five entries.

Turkey cock and two hens.—First, Ralph Carter, Upperthong. Two entries.

Three *young Turkeys*.—First, George Haigh, Liphill-bank; second, Ralph Carter, Upperthong. Five entries.

Gander and two Geese.—First, Samuel Hebblethwaite, Mirfield; second, G. H. Hinchliff, The Nab. Three entries.

Three *Goslings*.—First, Samuel Hebblethwaite, Mirfield; second, Ralph Carter, Upperthong. Seven entries.

Best green Goose.—Second, Ralph Carter, Upperthong. Two entries.

Drake and two Ducks, white Aylesbury.—First, James Dixon, Bradford; second, C. J. Riley, Rose-hill, Birkby. Four entries.

Three *Ducklings*, white Aylesbury. —First, Noah Batley, Lippel-bank; second, John Harpin, Birks-house. Thirteen entries.

Drake and two Ducks, Rouen, or any other variety.—First, Ralph Carter, Upperthong; second, C. S. Floyd, Sands. Six entries.

Three *Ducklings, Rouen, or any other variety*.—First, Ralph Carter, Upperthong; second, G. H. Hinchliff, The Nab. Five entries.

DEAD POULTRY, BUTTER, AND EGGS.

Best Goose, dressed.—First, T. P. Crosland, Gledholt; second, Ralph Carter, Upperthong. Four entries.

Best Turkey, dressed.—First and second, John Harpin, Birks-house. Six entries.

Best couple of Ducks, dressed.—First and second, John Harpin, Birks-house; third, G. H. Hinchliff, The Nab. Five entries.

Best couple of Fowls, dressed.—First and second, C. S. Floyd, Sands. Seven entries.

Best half-dozen Pigeons, dressed.—First, G. H. Hinchliff, The Nab. Two entries.

BEE-KEEPING FOR COTTAGERS.

It will be our object, in the following papers, to give our readers such a knowledge of the Art of Bee-keeping as to make the pursuit of it not only a source of profit but of pleasure; for bee-keeping, to be profitable, requires a fair amount of reasoning, and what can be a purer source of

pleasure than the exercise of the reasoning faculties with which man has been endowed by his Great Creator.

Before going on with the practical part of our papers, it may be useful to make a few remarks on the present state of bee-keeping among cottagers, and point out some of the benefits and pleasures that may be derived from it.

Bee-hives are seldom to be seen amongst cottagers, and when they are seen, their dirty and neglected condition, in general, says but little either for the comfort of the bees, or the understanding of their masters. This, we believe, is seldom the cottagers' own fault; want of opportunity and teaching, and not unwillingness to learn, usually lies at the bottom of it; it is to give them this opportunity and teaching that we are now writing.

To those who have never yet began bee-keeping, we say begin at once. If you cannot buy, borrow a swarm from your neighbour, upon such terms as to paying back in kind on its increasing, or in money from your expected profits, as you may be able to make. To those who already have bees, and are keeping them after the old fashion, we say alter your fashion; and adopt as nearly as may be the plan we are about to show you. Believe us, that if your bees be profitable to you now (and that you continue to keep them, proves that they are profitable), they will be thrice as profitable then, whilst the comfort of the bees themselves will be much greater. If it give a little more trouble, what matters it? Planning and making and mending in the long winter months, will pass away many long hours, and keep you from idleness and the beer-shop, if from nothing worse; whilst watching and operating in the summer will bring with it a pleasure ever new. As your liking for bees increases, you will begin to take a greater pride in your home; and you will be anxious to plant near your hives such wild and garden flowers as you may be able to obtain.

Do not think that we have, or are about to put forward any new-fangled notions. All that we have stated, and are about to state, has been well proved. If you are afraid to follow out our plans upon all your hives, try them upon one. Perhaps it will be the better course; but we venture to say that you will not stop there. Any little awkwardness that may be felt in practice at first will soon pass off. Anything that you may not understand, your masters will willingly explain; your own sense, and the assistance of your friends, will soon enable you to get over all difficulties.

In all you do, try to fall in with the habits of the bees as much as possible. Assist them; do not thwart them. Make up in attention for the effects of our changeable weather. Do not be put down by the ill-natured laughter of others. The time will come when it will be your turn to laugh, and they who laughed before will be glad to come to you for instruction. Then give it them by all means. Let no jealousy or selfishness creep over you; there is room for all in bee-keeping, and there will be, when bees are ten times as plentiful as they are now.

In the papers we are about to write, we shall divide the subject into six sections: the first will contain a short natural history of the Honey-bee; the second, a list and description of such things as will be wanted for the proper management of Bees; the third, a table showing the monthly requirements of the Bee-garden; the fourth, a description of the method of operating; the fifth, a system of management; and the sixth, some account of the uses of honey, and the method of preparing it and wax for the market.

SECTION I.—ON THE NATURAL HISTORY OF THE HONEY-BEE.

THE INMATES OF A HIVE AND THEIR RESPECTIVE OFFICES.

During the summer months a hive contains, or should contain, three kinds of bees; the Queen, who lays every egg that is laid in the hive, and is the only female in it,—the working bees, or neuters (that is neither males nor females), who collect honey, build combs, attend upon the queen (to whom they are devotedly attached), watch over, warm, and nourish the eggs as they are laid, clean out the cells ready for fresh eggs upon the young bees leaving them, air the hive by fanning with their wings, and perform all the ordinary business of the hive,—and the drones; and it has been calculated that a strong (that is, a populous) hive numbers, in time, before swarming, about 14,000 bees, the working

bees being about twenty times more numerous than the drones. One queen reigns supreme over the whole.

The *Queen* is darker on the back, browner underneath, and shorter in the wings than the working bees: she is provided with a sting, of which, however, she seldom makes use, except to punish rival queens (whose presence in the hive she will not suffer). She seldom, if ever, leaves the hive, except at swarming time. The time of the year at which she begins to lay eggs depends somewhat upon the weather; in mild seasons she begins earlier than in cold, but, generally speaking, young working bees may be seen about the hives in the third week in February, and sometimes earlier. Queen-bee eggs are not laid till considerably later than the workers' eggs, and then only in small numbers, and not in the common cells, but in cells much larger, and somewhat of an oblong shape, fastened to the sides of the combs, and having their openings downwards. The young Queens are ready to come from their cells about the sixteenth day from the laying of the eggs, but if not required for the purposes of the hive (in consequence of the old queen having died, or left the hive with a swarm), they are turned out and die. If the old queen die without leaving queen eggs behind her, the bees have the power (provided there be working bee broods, not more than two or three days old in the hive at the time), of producing a queen from this brood: this is effected by the working bees enlarging an ordinary working bee cell, and feeding the brood with a food different from that naturally provided for the working brood. The Queen Bee is much longer lived than the working bees, a queen having been known to live four or five years.

The *Working Bees* are smaller than either the queen or the drones. The queen begins her labours in the spring by laying a great number of the eggs from which they are hatched; one egg is laid in each brood cell (for cells, it must be remembered, are of two sorts, brood cells and honey cells, the latter being in all respects much larger than the former, and by no means fitted to receive eggs). In four or five days the eggs are hatched, and the grub (which never leaves its cell until fully grown) is for the next five or six days carefully fed by the old bees with pollen (as the fine powder found in the stamens of the flowers is called), mixed into a paste with water which is collected for the purpose. After that time, the grub spin themselves into a ball, somewhat after the manner of a caterpillar. The old bees then close up the cells, and on the twenty-first day from the laying of the egg, a perfect and full-sized bee comes forth; it is quickly cleansed from the dirt of the cell by its companions, in whose labours it directly joins. A year is considered as about the length of a working bee's life.

The *Drones* are larger than the working bees, and are known by the loud noise they make in flying; they take no part in the business of the hive. They have no sting, appear only in the middle of the day, and are all turned out by the working bees when the breeding season ends, and soon perish. In hives where swarming is prevented, this generally takes place rather earlier than in hives where it is not. Drone eggs are laid about the beginning of April, in stronger and larger cells than those in which workers' eggs are laid, and they arrive at full age about twenty-five or twenty-six days from the time of laying. The function of the drone is to fertilise the queen, but whether this is effected inside the hive or in the open air is doubtful. Some writers hold that the eggs are fertilized after they have been laid, but this view is clearly erroneous.

(To be continued.)

GLEANINGS.

EXTRAORDINARY SALE OF CATTLE, &c., IN AMERICA.—The Northern Kentucky Importing Association of Breeders had an auction sale of their pure-blooded short-horn stock, purchased in England, in 1853, at the farm of Brutus Clay, Bourbon, county Kentucky, on the 18th day of August, 1853. The Association is a Kentucky one, and the purchasers were put under obligations not to remove the stock from that state for one year. With this limitation the sale was well attended, and bidding spirited.

BULLS.—1. Young Chilton, white, calved in May, 1850, cost in England 600 dls., sold for 3,005 dls. 2. Diamond, roan, calved in June, 1850, cost 630 dls., sold for 6,001 dls. 3. The Count, roan, calved in July, 1851, cost 525 dls., sold for 2,515 dls. 4. Orontos, red and white, calved Sept. 1851, cost 630 dls., sold for 4,525 dls. 5. Fusileer, roan, calved February, 1853, cost 375 dls., sold for 4,475 dls. 6. Senator, white, calved April, 1852, cost 630 dls., sold for 2,000 dls. 7. Belleville, roan, calved January, 1852, cost 1,050 dls., sold for 1,500 dls. 8. Challenger, roan, calved January 1852, cost 450 dls., sold for 4,858 dls. 9. Fortunatus, roan, calved December, 1852, cost 275 dls., sold for 1,800 dls. 10. Yorkshire Maynard, dark roan, calved March, 1852, cost 275 dls., sold for 1,000 dls.

COWS AND HEIFERS.—1. Lady Stanhope, roan, calved in 1847, cost 375 dls., sold for 1,500 dls. 2. Lady Fairy, red, calved in June, 1848, cost 525 dls., sold for 1,150 dls. 3. Roan Duchess, roan, calved July, 1850, cost 275 dls., sold for 900 dls. 4. Goodness, red, calved September, 1847, cost 525 dls., sold for 2,025 dls. 5. Gem, roan, calved April, 1851, cost 775 dls., sold for 825 dls. 6. Equity, deep red, calved March, 1852, cost 400 dls., sold for 1000 dls. 7. Necklace, roan, calved April 1852, cost 260 dls., sold for 805 dls. 8. Bracelet, roan, twin of Necklace, cost 260 dls., sold for 750 dls. 9. Mazurka, dark roan, calved August, 1851, cost 600 dls., sold for 3,050 dls. 10. Lady Caroline, light roan, calved July, 1851, cost 400 dls., sold for 1,825 dls. 11. Duchess of Sutherland, red, calved December, 1850, cost 375 dls., sold for 900 dls. 12. Maid of Melrose, rich roan, calved October, 1851, cost 775 dls., sold for 2,200 dls. 13. Muffin, red roan, calved June, 1852, cost 225 dls., sold for 535 dls. 14. Orphan Nell, roan, calved November, 1852, cost 525 dls., sold for 1,000 dls. 15. Flattery, white, calved November, 1851, cost 325 dls., sold for 805 dls.

SHEEP.—*Southdown*.—Three bucks sold for 755 dls., 480 dls., and 340 dls., and three ewes for 250 dls., 180 dls., and 230 dls. *Cotswold*.—Two bucks 1,010 dls., and 710 dls., and six ewes, 270 dls., 150 dls., 221 dls., 230 dls., 200 dls., 150 dls., and 200 dls. *Leicester*.—One buck and two ewes for 52 dls. each.

HORSES.—Cleveland bay horse (Young Lord). 1,000 dls., sold for 2,800 dls.—(*New York Herald*, August 26, 1853.)

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of the Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

GERANIUMS IN A PARLOUR-WINDOW (*Annie*).—A great deal has been said on window-gardening. Cleanliness, keeping them in an equal temperature, giving them a moist atmosphere, by covering the pots with moss, and moistening the foliage when there is much fire in the room, are of first moment. The plants would not do in a Wardian case; they would not have enough of air, and there would be considerable trouble in watering them. The best plants for such a purpose are *Mosses* and *Ferns*. They would not require to be often watered, because the vapour that rose during the day, in a hot room, would be condensed and fall again when it became cool. A double-window, with a good space between the sashes, would enable you to grow plants in good style, much better than any Wardian case, as you could cover your outside sash when the weather was cold, could give what air you liked there, without admitting more than you liked into the sitting-room. By keeping the inner sash shut, you would save the plants from all the dust in cleaning, and also from dried air when you had a large fire, while, when the room got cooler, you could admit a more moist and temperate atmosphere to the plants at will. Very much pleasure may be derived from such contrivances; but instead of forwarding your plants in a window, when you have a greenhouse, we would prefer growing them in the latter, and then bringing them, when in good condition, to the former. As for cramming in winter, you would be amazed to see how the best gardeners must do that.

TREATMENT OF VINES (*Walter Wilson*).—With the exception of putting a layer of coal-ashes beneath your compost, which we do not see the propriety of, you have managed your Vines well. It is quite as well for you that the Vines did not bear well the second year; they will pay you back with interest. Your description of the strength of the Vines, and the shanking of some, and the never swelling of others, lead us to imagine, notwithstanding your statement to the contrary, that you had more of growth than of maturation. The Muscats will require a temperature of 70°, and 10° to 15° more for sunshine, to set well—a matter

of some moment as respects fuel and the time of forcing. Until your Vines have had a crop or two, you will err with propriety in commencing on the 1st of March, instead of the 1st of February, and then you may begin earlier every succeeding year. The blotching and scalding of the leaves of the greenhouse Vines, we can attribute to nothing but want of sufficient air, and a very bright sun after some dark days. All laterals, during the first stage of their growth, tend to the increase of the main shoot, but there are two reasons for their removal *now*. The first is, that foliage made after this season takes more vigour away than what it returns. And the second is, that having, as you say, obtained strength of rod, you must bear in mind that maturation must now be hastened, and that, therefore, the merely growing mediums, in the shape of laterals, must be gradually got rid of, taking off those nearest the base first. I have seen laterals left on a strong shoot until late in the season, and the result was pointed buds, and a poor show the following year. From rods half the circumference, the laterals removed as soon as the wood began to brown, the next leaf to each bud left, you will generally have large, round buds, that will show more than you want next season. Bear in mind, that, generally speaking, for all this ripening wood, &c., one day in the beginning of September is worth two in October.

EARLY VINERY (*A Subscriber*).—We can conceive nothing more likely to answer than one of Mr. Fleming's narrow upright houses, with a small span-roof, and a good brick wall at back, especially with such heating by a flue as you propose. You would find it a costly matter to have a span-roofed house, even in the shape of fuel. If adopted at all, the two ends should be north and south. If east and west, you could grow little on the north side. Mr. Fleming's house, for early work, may not be yet sufficiently practically tested, and a narrow lean-to house would be, perhaps, the most economical, and has been proved to answer in numberless cases—say, back wall, nine or ten feet above the front wall plate; width of house, seven or eight feet; Vines planted inside, with fruit wall on arches, air ventilators in the front wall, and top sashes either made to move, or ventilators in the back wall, with a hollow space reaching to the top, and opening there to the south side. The advantage of this is, that in early work the air gets heated by reflection from the glass before it can get into the house by moving the ventilators. If the flue is near the front ventilators, air admitted there would also be heated before being diffused. As to flues, the finest grapes have been grown by that mode of heating, but it is less cleanly, less safe, and the heat is not so equally diffused as by hot water.

BANANA FRUIT.—Since we answered a correspondent last week, we have seen a gentleman who cultivated the Banana largely abroad. He says, the fruit is never thinned, nor does it require thinning; the foot-stalk, and the spaces between the fruit, increase as the individual parts grow.

GLADIOLUS SEEDS (*A. P. B. II.*).—This is just the right time to sow Gladiolus seeds, if you have a good frame, or greenhouse, to keep it over the winter; if not, you can keep the seed till February, and sow it then. It does not require heat, but heat will not hurt it till the leaves are two or three inches long. Equal quantities of sand, peat, and loam, is about the best compost; and if you just cover the seeds it will be deep enough for them. Seedlings from a sowing early in October are almost sure to flower the following season if they are well treated: spring-sown, they seldom flower before the second season.

WINTERING LOBELIA AND SALVIA (*M. M.*).—The tops are cut off, and the roots are packed in sand, in some dry place where the frost does not reach. If you have only a few roots of each, they would be better in pots, but still in sand.

GLADIOLUS (*Margaret*).—We are glad to hear from you, and you will have a list, and a story, next week, about the Gladioluses, and other things.

ROSES (*L. E. L.*).—Strong, rich soil, such as a gardener would choose for Onions or Cauliflowers, is the best for all Roses. There is no remedy in the world, or no palliation, for Rose buds turning hard, or opening with green centres. If the plants are strong, transplanting them about the beginning of November is one of the best remedies. If they are not thrifty, scrape off the top soil all round, and down to the roots, and fill up with some fresh, good soil, and very rotten dung, well mixed, before winter; and after the middle of May begin to water them with weak manure water twice a week till the end of July—if that will not cure them nothing else will. Messrs. Paul's work on the Rose is one of the best. You shall have a note of the best *Rhododendrons* in another week.

PEACOCK IRIS (*A. R.*).—This has been inserted in some of the London catalogues some years since, but whether true or not we never proved. Can any correspondent send a bulb of the true *Vieuxseuxia Pavonia* to Mr. Beaton?

DEPTH FOR PLANTING BULBS (*J. R. C.*).—*Gladiolus* and *Lilies* three inches deep, and *Crocuses* two inches, but a little deeper is no harm, and if you plant the more tender Gladioli in the autumn, place them six inches deep; the three-inch depth is for hardy ones.

GRUBS (*Ibid.*).—We are just as much in the dark as you are about the "best mixture for destroying grubs." Strong salts and poisons *would* kill them, but the bother of it is, they will not eat anything that is disagreeable to them; but by dressing the ground with what is disagreeable to them, and not poisonous to other things, we often drive them away. A little common salt, six times as much soot, and an equal quantity of fresh slacked lime, is as good a mixture as was ever thought of, but half the battle is to have the ground first trenched deep.

LOBELIA RAMOSOIDES (*Verax*).—This plant was mentioned in one of

our reports of the exhibitions at Chiswick. It is a chance seedling, and is kept from cuttings; it is a dark blue flower, the habit upright, and the best by far of all the little blues. All the London nurserymen have it on sale. *Lobelia ramosa* is an annual, and the best blue annual we have, but it can only be managed from seeds.

MOVING A CEDAR OF LEBANON (*J. P.*).—There can be no danger *now* about removing your Cedar of Lebanon, which is only eleven feet high, after having had a trench dug round the roots two years ago. First of all, prepare the place to receive it, a hole or pit, four feet in diameter, and two feet deep, put a foot of good soil at the bottom, on which to place the roots; and if the tree seems too much out of the ground, make a mound all round, and in the shape of a basin on the top to receive water; that is a better way than planting on the dead level. Make a trench this time outside of the former trench, and then, with a fork, work down the soil from the roots into the trench; throw that out, and work down more, and so on, till you get near to the stem, when you will see if you shall be able to move a little ball of it, but if not, it does not matter much. After placing it in the new situation, break the soil fine, and with a rose water-pot let one man keep pouring water all round while another is filling-in the soil; the water will wash the soil into every little crevice between the roots. After all is finished, and the tree is well staked, fill with water the basin on the top two or three times for the next ten days, and that will do till the March winds come. Next April, May, and June, is the critical time for it, but watering and mulching will secure it.

ROSES (*T. Mc'G.*).—Nos. 2, 3, 6, 7, 8, 11, 12, 20, 21, are Hybrid Perpetuals; No. 1, Noisette; Nos. 4, 9, 17, 22, Hybrid China; No. 10, China; Nos. 13, 14, 15, 16, Gallica; 18 and 23, Bourbon; 9, Lavinia; and 19, Queen of Summer, we quite forget what they are; 5, Celine. There is one a Moss Rose, and one a Hybrid China. Your Roses are all good.

CONSERVATORY (*G. B. C.*).—"Would you be good enough to give me a list of plants for a conservatory?" is too wide a question to answer so as to be of any use. We think you must mean only climbers, but you do not say a single word about them. We will keep your letter till we really know what you want.

DUCKS (*F. C. L.*).—The Rouen will best suit you; but Ducks, as breeding stock, will not pay without sufficient water to swim in. Steamed roots, with barley-meal and bran, and in the laying and moulting seasons an occasional handful of oats, should keep them in good condition.

QUALIFICATIONS OF THE WHITE BANTAM (*Greenhorn*).—The White Bantam cock should not exceed 17 ounces, nor the hen 14 ounces. A double comb, and clean legs, are now regarded as essentials for the prize pen. (See "*Bantams*," in *THE POULTRY BOOK*.)

CROSS BETWEEN SHANGHAI AND DORKINGS (*Gourmand*).—The crosses best adapted for the table, between the Dorking and Shanghai, have resulted from the male of the former breed with a Shanghai hen. Such an arrangement will be most successful in remedying the defect you complain of—want of breast.

THE MOST USEFUL TREES FOR FAMILY USE, &c. (*Clericus, R.*).—We are puzzled by your first question—a west aspect stone-wall 120 feet long. The figure representing the height, is a "pot hook" we cannot make out; and you ask what are the most useful trees to plant for family use? That depends upon the family, and not upon opinion. For the pot, there is nothing they put on west walls more useful than Apples in many parts of the country. The wall, for ought we know, may not be high enough to grow Tomatoes against. A row of *Dahlias* along the dotted line would be the easiest summer fence between the vegetables and flowers; but this is a mere conjecture, our data in insufficient to say what would suit best. *Arches* at *b* and *c* would look very well indeed, and a hedge of climbing Roses, on rough trellis, would look very well between them, instead of *Dahlias*. Some kinds of evergreens ought to fill the *boxes*, in winter, with a thick border of yellow and white *Crocuses*, and some *Hyacinths* in front of them. Scarlet Geraniums, or Verbenas, bordered with light kinds of the same, would look best in summer, for a season or two, then change to *Calecolarias*, *Petunias*, and mixtures. It should never be lost sight of, that large flower-boxes or baskets are only flower-beds, so much risen above the surface, and may be planted just like flower-beds. Some people like one kind of plants in their beds; others quite different. You dislike the *Salvias*; nothing we like better; so you had not better trust to our choice. We never yet saw any plants in boxes or baskets half so telling as scarlet Geraniums; and we never yet saw a basket or vase of mixed flowers that was quite as it should be in our eyes.

FLOWER-GARDEN PLAN (*J. R.*).—The centre and the end next the door are good, and strictly geometric; but the farthest end is not to our taste at all, and the planting will not do in these days.

HEATING A PROPAGATING-PIT (*Ibid.*).—Your plan for heating a propagating-pit from the kitchen boiler is ingenious, but the principle of the siphon is a troublesome way, and anyone who adopted it, except as a hobby of his own, would be sure to fail in the long run.

WINTER PLANTS FOR STONE VASES (*Constant Supporter*).—If you could get nice little bushes of *Laurustinus*, with balls, and well set with flower blooms, they would be both suitable and ornamental; next to them, *yellow variegated Holly* are the best; but much depends on the situation. In places near architecture, middle-sized *Yuccas* would be the appropriate plants to put into stone vases, and *Aloes* in the summer. Why not try first with cut branches? Stick a branch of *Holly*, *Alaternus*, *Evergreen Oak*, *Portugal Laurel*, and all other evergreens, and then take rooted plants of the kind you like best. We would never ask anybody's advice about a thing where there was a choice of subjects, and that choice depending upon taste.

WEIGHT OF HIVE (*C. J. Foster*).—Thirty pounds would be more than sufficient to carry your bees through the winter and spring without feeding, but do not take any of it from them, perhaps the bees-comb at this time weighs about three pounds. Drones are usually killed in July and August. Neighbour's hive requires only to be kept dry; let your zinc cover be large enough to prevent the rain driving against it.

PIGEONS FORSAKING THEIR YOUNG (*Puss-in-Boots*).—Many of the fancy pigeons are had nursers, and hence the practice of hatching their eggs under the common dove-cot bird "*Columba affinis*." You do not mention the sorts kept by you, so we are unable to judge whether they are such as would be likely to display such unnatural tendencies. Frequent disturbance by entering their loft, or handling the young ones, might render them liable to forsake the nest.—W.

DORKINGS WITH FIVE TOES ON ONE FOOT (*Catherine Anthony*).—A Dorking, with five toes on only one foot, would certainly not take a prize, but Chickens from the best birds are "occasionally" thus deficient. Gapes, like other diseases of the trachea, is most frequent in cold, damp weather, but crowding chickens on tainted ground is also a common source of this disease.—W.

GOLD FISH.—*G. W.* writes as follows,—"I am greatly obliged to your correspondent, "*J. Wortheim*," for the light he throws, in your 258th number of *THE COTTAGE GARDENER*, on the treatment of Gold Fish. By the aid of strong pressure, between hot iron plates, we have succeeded in making a biscuit of rice; my fish were at first coy in tasting it, but perhaps the powdered bark may render it more palatable to them. Pray, is not the Camphor-tree a species of *Cinnamomum*, and procurable at the chemists? (Both are of the natural order of *Laurels*). As my gold fish are also shy breeders, perhaps your travelled correspondent could further assist me by indicating the sort of insect that produces the fructifying eggs. I have remarked their insatiable appetite for the ephemeral styled May-flies, and also that in the absence of other food (as I conjecture) the stronger will devour the weaker, but I never heard the name of this propensity before."

HEATING VINERY (*A Subscriber*).—There is no mode of heating it but by hot-water pipes, the old flue system, or hot-beds in the interior.

SLUGS (*W. Lort*).—There is no royal road to the destruction of slugs when they have established themselves extensively in a soil. Patient perseverance in the use of means is the only mode of attaining success. Frequent hoeing the surface, and sprinkling lime over the surface late in the evening, during fine weather, and a plentiful sowing of salt, about twenty bushels per acre, during moist weather, are the only modes of prevailing over the enemy.

BURY ST. EDMUND'S POULTRY SHOW.—We have received two anonymous letters complaining of the alteration of one of the rules, and of an exhibitor showing fowls not his own. Before we make any enquiries, our correspondents must confide their names to us.

AUTUMN-PLANTING POTATOES (*An Amateur*).—Plant them eight inches deep, and the sets unsprouted. Early in November is a good time; and the soil should be light and well-drained. No one but the very inconsiderate and reckless now cultivate any varieties but the early ripening ones, such as Walnut-leaved Kidneys, Ash-leaved Kidneys, and Julys. The Walnut-leaved should not be planted until March.

BOTANY (*A. P.*).—Hefrey's *Rudiments of Botany* will supply what you require.

TURKEYS BECOME BLIND (*J. J.*).—We have sent your letter to Mr. Tegetmeier. If you look into our indexes, you will find all you require about Mushroom-beds, &c.

"A COUNTRY CURATE."—Although our valued correspondent has not yet emigrated we believe, yet we do not know his address, so we cannot obtain "An Old Subscriber" the information he asks for.

NAME OF PLANT (*J. M.*).—Your weed is *Euphorbia peplus*, Petty Spurge, or Wart-wort.

DISEASED PIGEONS (*J. Hewitt*).—The pigeons that are described as becoming thin and moping, are most probably affected with inflammation of the stomach. When this disorder is in an advanced stage, it is most difficult to cure, but it may always be prevented by attention to the diet. Pigeons in towns are often kept without any green food, and on tares, peas, or beans alone. A greater variation in their food, and a supply of green vegetables, will lessen the tendency to the complaint.

DISORDERED FOWLS (*B.*).—It is not uncommon for the dung of fowls to become black and watery. I should be more inclined to try the effect of an entire and total change of food than have recourse to medicine. Should, however, this change not succeed in effecting a cure, then try one-third of a grain of calomel every other night.—W. B. T.

ERROR.—In Messrs. Page and Co.'s advertisement (see first page), *Trifolium incarnatum* seed was priced, last week, at 5s. per pound, instead of 5d.

CALENDAR FOR OCTOBER.

ORCHID HOUSE.

AIR; in fine warm weather, a small opening to allow fresh air to enter the house will be useful, both for the keeping down the temperature of the house, and changing the air. *BLETIAS* should be put to rest by withholding water, and placing them in a pit or cooler house. *CYCNOCHES*, *CYRTOPODIUMS*, and *CATASETUMS*. These plants should now be kept dry a few days in the warm house, and when perfectly so remove them into a cooler one. FIRE may be applied to heat the hot-water every night, more or less, according to the state of the temperature out-of-doors; raise the thermometer by day to 70°, by night let it fall to 60°. **INSECTS**, look diligently after; every one destroyed now will prevent a host from coming into life in the spring. **LYCASTES**, and other similar plants, should go to rest; place them on a shelf where they may be protected from ever receiving any water. **PLANTS** that require to be placed in a place to rest may be known, first, by the full, plump, mature pseudobulbs, and, secondly, by the leaves turning yellow and dropping off. When in such a state, it is absolutely necessary to reduce the water and heat to prevent them from growing again prematurely. **PLANTS** that are growing should have their due share of water, and be kept moderately warm; some may require potting, and all will be the better for a top-dressing with fresh compost. **STANHOPEAS** will now be at rest; give no water till the spring. This month is a suitable season for providing materials for growing Orchids, such as fibrous peat, turfy loam, sphagnum or bog moss, branches of trees, and broken crocks; all these, duly prepared, and kept dry and warm, will be ready for use whenever they are wanted during the wet season.

T. APPLEBY.

PLANT STOVE.

ÆSCHYNANTHIUS, reduce water to; prune in straggling branches. **AIR**, give every favourable day. **ACHIMENES**, place in a cooler house, to cause them to give over growing and go to rest; give no water, and put them in a spot where no water or dry heat will reach them; this rule does not apply to *A. picta*, which should now be in flower, and in its greatest beauty. **AMARYLLIS AULICA** will now be showing flowers; remove it, as soon as the flower-buds are visible, from the tan-pit into the stove; all other species of stove *Amaryllis* should now be at rest. **CONOCLINIUM IANTHEMUM**, or, as it is now called, *Hebeclinium ianthemum*, a winter-flowering, elegant stove plant, repot, and grow on to flower in February or March. **ERANTHEMUM PULCHELLUM**, and *E. strictum*, treat similarly. **ERANTHEMUMS**, water with liquid-manure, to induce them to open their flowers freely. **GESNERAS** should all be at rest, excepting *G. zebrina*, which will now be one of the chiefest ornaments of the stove. **JUSTICIA**; several species will now be in flower; water them freely, occasionally using liquid-manure. **LUCULIA GRATISSIMA**, though not essentially a stove-plant, will flower much finer early in the season if brought into the stove this month. **MEDINILLAS**, young plants repot; older plants, keep partly dry and cool. **PASSION FLOWERS**, trim in freely. **POINSETTIAS**, water freely, to produce fine head of bloom in winter. **ROGIERA AMENA**, and **CORDIFLORA**, repot; place in heat, to bloom about Christmas; a new genus of dwarf, free, winter-flowering, stove-shrubs. **REMOVE** stove-plants kept in frames through the summer into the stove; water freely, to compensate for the loss of the moist atmosphere of the pit. **WATER**, apply very moderately to the general stock. Remove all decaying leaves, and top-dress generally.

T. APPLEBY.

GREENHOUSE.

AIR, admit freely during the day, but sparingly at night, unless the thermometer out-of-doors be about 40°. **ALSTROMERIAS**, shift, or rather pot in rich light soil, and place where they will be secure from frost. They thrive beautifully when planted out in a pit or border, where they can be covered with glass in winter. **AZALEAS**, remove into the house, especially those that bloomed early, as the least frost will discolour their leaves. **BULBS**, pot for early blooming. **CINERARIAS**, forward ones give manure water, and have secured under glass. Very little frost injures them. **CAMELLIAS** (See **AZALEAS**). **CALCEOLARIAS**, strike cutting; pot forward plants; prick off seedlings. **CHRYSANTHEMUMS** for winter blooming, provide with shelter from cold rains and early frosts, and water with manure-water, alternately with clean. **CLIMBERS** on rafters now prune in, to give light to the plants beneath. **CLERODENDRONS**, **GESNERAS**, **LANTANAS**, **ACHIMENES**, &c., keep in the warmest end of the house preparatory to resting them for the winter, or returning to the plant stove. **AZALEAS**, **CAMELLIAS**, **FUCHSIAS**, &c., at the coolest. Cuttings of all kinds, especially late inserted ones, intended for out-door work next season, keep secure from dampness. Very dull cold weather will be their greatest enemy. Be careful how you apply any artificial heat—it generally does more harm than good. **CYTISUS** and **GENISTA**, scourge well with soap-suds, and then with clean water, to remove all traces of red-spider, and then place where they can be sheltered, before being housed at the end of the month. **ERYTHRINAS**, out-of-doors, when touched with frost, take up and pot, and placed under shelter, not cutting the stems down until moderately ripe. **GERANIUMS**, keep clear from fly; and slowly growing; this last condition is the best antidote against the former; avoid, however, letting them be cold and soaked too, for then you will have spot; forward ones may be repotted, and fresh struck ones potted off. **GLADIOLUS**, pot. **HEATHS** and **EPACRISSES**, get under shelter, and give them abundance of air, when

temperature about 40°. All hard-wooded plants will require similar treatment, only the hardiest may have the airiest and coolest place. EARLY FUCHSIAS may be put into sheds before their stems have been injured by frost; pot all young struck plants. *Geraniums*, *Calceolarias*, &c., for beds and vases, may be kept easier in boxes than in pots—say 5 inches deep, 6 inches wide, and 2½ feet in length; give them two or three inches each. *SALVIA SPLENDENS*, encourage with manure-waterings, and syringing with soot water to banish the Red-spider before housing it in the conservatory. Plants to be raised from the flower-beds should previously have their roots cut round, and then, after potting, should have a little bottom-heat, to encourage fresh roots, while the top temperature is kept cool. They will not require to be often watered for a time, but syringing the tops in sunny days will be serviceable. ALL PLANTS should be thoroughly CLEANED, and houses and glass washed and put in good order. WATER should also now be given with a careful hand, and only when necessary. A plant may not require it above once or twice a-week now that would have wanted refreshing twice in the dog-days, during a forenoon's sunshine. Those swelling their flower-buds, will require, however, a good supply. Bear in mind that bad watering is the great cause why pot plants so often languish and die.

R. FISH.

FRUIT-FORCING.

AIR-MOISTURE, gradually decrease. BOTTOM-HEAT must decline with the light, until they reach about 75° in December. CUCUMBERS, thin out carefully; stop regularly; and give liquid-manure. CHERRIES, in tubs or boxes, plunge in a cold and shaded situation. FIGS, see that the wood is well-ripened; those in pots plunge and secure from frost. FIRES, be moderate with; rather inclose sun-heat. FLUES, clean and repair. GRAPES, late, fire and ventilate freely; watch for decaying cherries. GLASS, wash all that is in any way dirty. MELONS, sustain a bottom-heat of near 80°; keep down red spider, and ventilate freely in the morning. NECTARINES and PEACHES: apply liquid-manure to late houses after heavy crops; keep away red spider; stop all growing shoots, and secure the ripening of the wood. PINES, sustain heat, in order to ventilate most freely those to winter in pits. Apply liquid-manure to swelling fruits, and sustain a bottom-heat of 80°; atmospheric from 65° to 85°. PRUNE Vines, Peaches, &c., for very early forcing. REST, apply systematically the principles to all things for early work. WATERING, decrease at the root in proportion to the decline of the season.

R. ERRINGTON.

FLOWER-GARDEN.

ALSTROMERIAS, Van Hout's varieties, and others, plant six inches deep, and in frosty weather cover with leaves. ANEMONES, plant for earliest bloom. Sow a few of the hardiest ANNUALS before the end of the first week. AURICULAS and POLYANTHUSES, put under shelter. BEDDING GERANIUMS, save as many as you can store; cut them close, and plant them in cold pits; or dry, and keep in the upper rooms of the house. BULBOUS ROOTS, finish planting in dry weather; pot for latest forcing, and for plunging in flower-beds, &c. CARNATION layers, finish planting and potting; secure the pot ones from rains. CLIMBERS of all sorts, plant, prune, and train. COMPOST, prepare, and turn in dry weather. DAHLIAS, cut down after frost, and let the roots remain as long as it is safe; when taken up, dry them in open sheds, &c., before storing where frost and damp cannot reach them. DRESS the beds and borders, and put mark-sticks to bulbs and other roots, to guide you when digging. EDGINGS, plant. EVERGREENS, finish planting, h. FIBROUS-ROOTED PLANTS, finish dividing and planting, h. FORT over borders, &c. GRASS, cut very close the last time; keep clear of leaves; and roll. GRAVEL, weed and roll. HEDGES, plant, clip, and clear at bottom. HOE and rake shrubberies, and bury the leaves, &c., between the plants. IRIDS, as *Ixins*, *Gladioli*, &c., plant, and shelter from frost. LAYERING, perform generally. LEAVES, gather for compost, &c. MARVEL OF PERU, take up and store like Dahlias. MULCH round trees and shrubs lately planted. PLANT perennials and biennials. PLANTING, perform generally. POTTED PLANTS, for forcing, plunge in the earth of a well-sheltered border, facing the sun. PRUNE shrubs and trees generally. RANUNCULUSES, plant for earliest bloom; seedlings of them, in boxes, &c., remove to a warm situation. ROSE-BUDS, untie the matting, if not already done, from newly-budded, and cut the shoots to within six inches of the buds. SHRUBS of all kinds, plant, stake, and mulch. SUCKERS, from Roses and other shrubs, separate and plant. TIGRIDIAS, save from frost as long as possible; should not be dried till January or February. TULIPS, finish planting, h.

D. BEATON.

FLORISTS' FLOWERS.

ANEMONES, plant early in the month. AURICULAS and POLYANTHUSES, place in their winter quarters, m.; give no more water than just sufficient to keep them from flagging. CALCEOLARIAS, place close to the glass; prick off seedlings. CHRYSANTHEMUMS, give abundance of water to and plenty of air; kill insects on by frequent smoking. CARNATIONS and PICOTEES, finish potting-off into 48-pots, and place under shelter. CINERARIAS, keep in frames well protected from frost till next month, excepting early flowerers, which should, as soon as bloom is perceived, be removed into the greenhouse; seedlings pot off. DAHLIAS, protect from frost; if already caught by it, cut down, and lift the roots, to prevent excessive bleeding; protect plants cut down from frost, by covering with a layer of coal-ashes. FUCHSIAS, gradually dry off, and place under the stages, or in sheds, where the frost will not reach them. GLADIOLI, plant b. in light rich soil. HYACINTHS, choice, plant, b. in a deep rich sandy soil, in a sheltered nook. Common sorts plant any-

where in beds and borders. POT HYACINTHS in mild compost, and deep pots, press the soil firm to prevent the roots descending too quickly to the bottom of the pots. IRISES, English and Spanish, plant b. in rich soil. PANSIES, pot off cuttings, very choice kinds place under glass in cold-frames; plant out common kinds, h.; prick out seedlings; old, straggling plants destroy, or prune in severely. PINKS, plant out finally where they are to bloom. RANUNCULUSES, examine and remove all decaying, or mouldy, tubers; prepare beds for; Turban varieties, plant b. TULIP-BEDS, level, and make ready to receive the bulbs early next month. WEEDS, pluck up in every department of the florists' garden.

T. APPLEY.

ORCHARD.

APPLES, house in succession. BERBERRIES, gather, m. BORDERS, prepare, b; composts. collect. CURRANTS, prune, c. DAMSONS, gather. FRUIT-TREES, remove, c. FRUIT-ROOM, carefully ventilate. FIGS, pluck off late fruit, c. GOOSEBERRIES, prune, c. GRAPES, bag, or otherwise protect. MULBERRIES, gather. MEDLARS, gather. PEARS, gather in succession, all at the end. PLANTING, prepare for, and proceed with at e. PRUNING, commence as soon as the leaves are east. RASPBERRIES, protect late-bearing. RETARDING: look well to currants and other retarded fruits; keep away mouldiness. ROOT-PRUNE, b. STRAWBERRIES, dress away runners, but not the leaves, b. TOMATOES, gather, and ripen on heat, b. VINES, attend well to, b. WOOD ripening: do all you can to secure this, b.

R. ERRINGTON.

KITCHEN-GARDEN.

This is the season to look out for plenty of plants of all kinds that are likely to be required for the ensuing spring; and if you run short of any particular kinds, be active in looking round among your neighbours and friends to see what you can exchange with them, as one may have an abundance of Lettuces, another an abundance of Cauliflowers, and so on. This is the way we should help one another. The next thing is to arrange good and proper situations for winter protection. Frames that are done with from the Cucumber or Melon crops may be removed from the old hotbeds, and set down on the ground, level or upon sloping banks; and if the frame be a deep one, the bottom may be filled with any kind of material to within nine inches of the top of the frame, then upon that six inches of good earth; this brings the crop up within two or three inches of the glass. The same may be done with merely four boards nailed together, and so placed upon a sloping bank, filling up in the same way, so as to keep the picked-out crops up close to the glass. These are contrivances for picking-out Cauliflowers, or Lettuces, Cabbage-plants of any kind, and make excellent make-shift shelters.

ANGELICA, keep clear of weeds. ARTICHOKEs, attend to winter dressing. ASPARAGUS-BEDS, attend to winter-dressing; seeds collect, and plant for forcing. BALM, plant. BEET, take up for storing. BORECOLES, towards the end of the month, may be lifted into quarters of less value, should the ground be likely to be wanted for other purposes for early spring crops. BROCOLIS, keep clear of weeds, and attend to those heading it, to protect from frost, &c. BURNET, plant. CABBAGES, plant out, prick out, and earth-stir among. CARDOONS, earth up. CARROTS, take up main crops for winter store, and attend to young growing crops, as thinning, keeping clear of weeds and fallen leaves, &c. CAULIFLOWERS, plant out under hand-glasses about the middle of the month; also in frames for winter protection. CELERY, plant and earth up. CHIVES, plant. COLEWORTS, plant. CRESS (Water), plant. CUCUMBERS, plant out; keep up heat of beds, by linings, &c.; water sparingly. DILL, plant. DUNG, prepare for hotbeds. EARTHING-UP and earth-stirring, attend to. ENDIVE, plant, and attend to blanching; full-grown may be taken up and planted at the foot of walls, and other warm corners, towards the end of the month, for winter protection. FENNEL, plant. HERBARY, dress. HORSE-RADISH, take up and plant. HYSSOP, plant. JERUSALEM ARTICHOKEs, take up as wanted. LEAVES fallen, remove frequently. LEEKS, earth-stir among. LETTUCES, plant and prick out under walls, or in frames, &c. MELONS (late), keep up heat, by linings or otherwise; no water must be given. MUSHROOM-BEDS, make, and attend to those in hearing, &c. NASTURTIUMS, gather for seed, if not done before. ONIONS, attend to those in store, and earth-stir or thin out the autumn-sown, or plant out if required, about the beginning of the month. PARSLEY, attend to potting, for use in winter. PARSNIPS, take up towards the end of the month for winter storing; leave in the ground for seed. PEAS are sown by some about the end of the month. PENNYROYAL, plant. POTATOES, attend to; look over often to see that no decayed ones remain among the bulk. RADISHES may be sown in warm border. RHUBARB, plant in pots for early forcing, end of the month. SALSIFY, take up for winter storing. SAVOYS, plant out. SCORZONERA, take up for winter storing. SEEDS, gather of any kinds as they ripen. SMALL SALADING sow as wanted. SPINACH, keep clear of weeds; thin out, and attend to in dry weather. TANSY, TARRAGON, and THYME, plant, if required. TOMATOES, gather; if not quite ripe, place them in some warm, dry situation, where they will soon ripen off. TURNIPS, clear of weeds, and thin out young crops. VACANT GROUNDS rough up, or ridge, or trench. Those who prick out plants in frames should be regular and mindful to take off the glass lights entirely in all favourable weather, and to tilt back and front in open, wet weather.

T. WEAVER.

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